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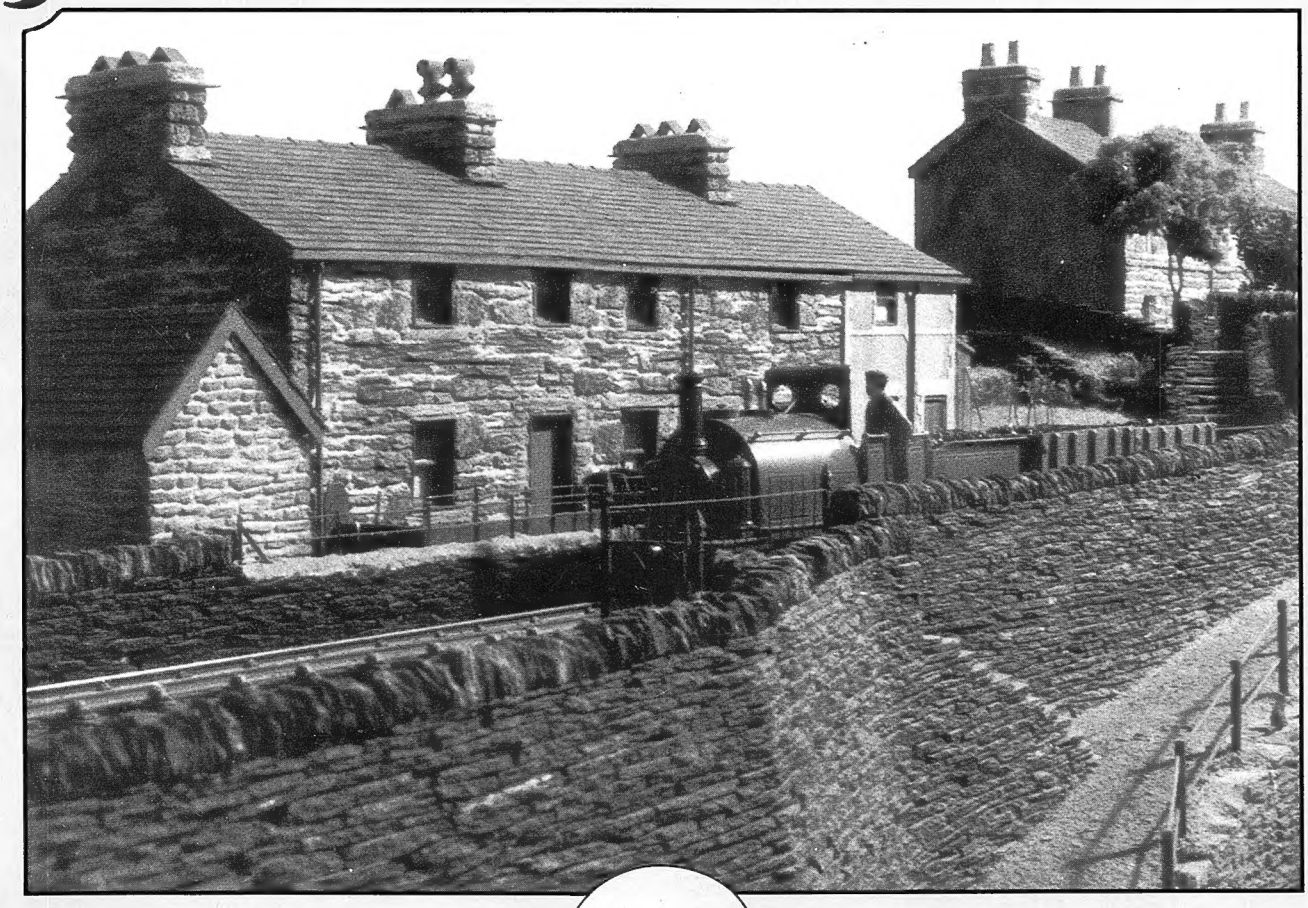

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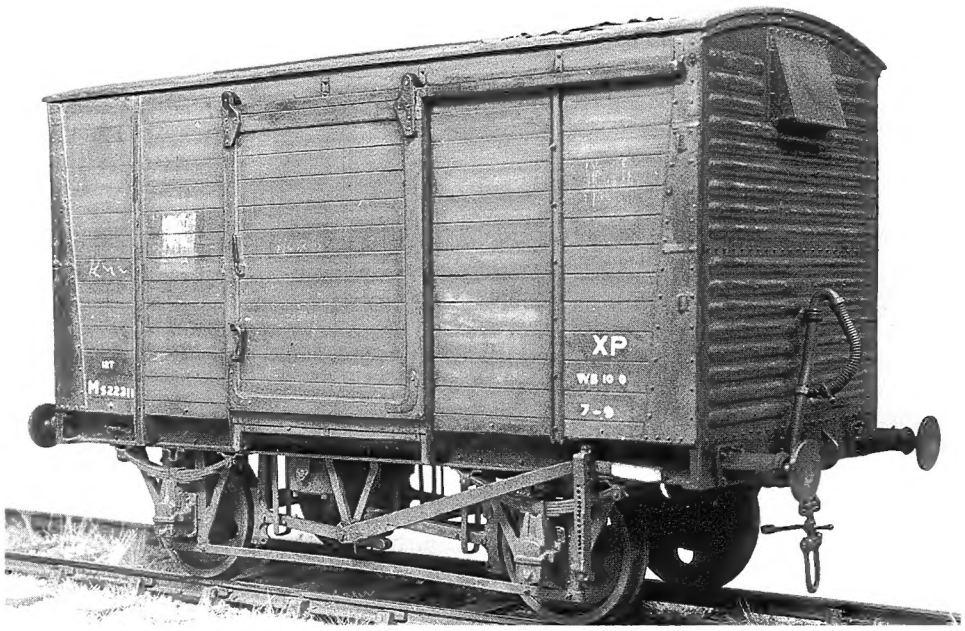

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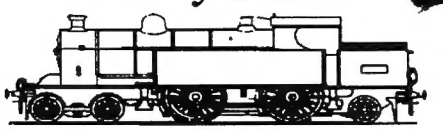

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This scene was modelled in 4mm scale by an Area Group of the Society. Photo: Eddie Bourne.

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Cover photo: A scene on Trevor Hughes's S-scale Tan-y-Grisiau. BARRY NORMAN

Narrow Gauge Adventure

Thirty years ago, when I was first bitten by the railway modelling bug, narrow gauge models cropped up relatively rarely in the model press. They seemed mainly to be freelance layouts, and whilst some of them certainly ranked as inspirational gems – like the Craig & Mertonford and the Aire Valley – the majority seemed unbearably twee, with impossibly-proportioned trains buzzing around endlessly tight curves through too many little tunnels. As often as not, these daft rabbit warrens bore suitably daft names which just about summed them up.

Strangely, though, I also remember finding something desperately compelling about these layouts. They seemed to have so much potential for enjoyment, if only all that 'baby train set' nonsense could be brushed aside. For me, that potential started to be realised when, in the mid-1960s, an embryo 4mm project called Ynys Gwyntog appeared in *Model Railway News*. I don't believe the builder, whoever he was, ever quite finished the layout, but he certainly managed to catch the essence of Welsh narrow gauge. The locomotives and stock looked like hard workers, not fairground rides, and the landscape and structures were uncompromisingly, beautifully Welsh. More importantly, I believe Ynys Gwyntog signalled the start of a steady change in approach to narrow gauge modelling. Today, narrow gauge prototypes are embraced and modelled for what they really were (or still are), rather than as an excuse to build trains for diddymen.

Trevor Hughes' model of the Festiniog's Tan-y-Grisiau, featured in this issue, is perhaps narrow gauge at its current peak. Built in S scale, the scratchbuilder's scale, it portrays the early FR in minute detail. The layout required some quite sophisticated home manufacturing techniques not to mention a pile of real rock, which was painstakingly split into tiny fragments to build miniature replicas of walls and structures. Trevor's layout is more than just a wonderfully accurate model – it is a historical document and a remarkable demonstration of how far narrow gauge has come since those old rabbit warrens.

Finally, we are sorry to record the death in February of Sydney Pritchard, publisher of *Railway Modeller*, head of Peco and one of the hobby's most energetic and innovative postwar figures. In stark contrast to some of today's railway modelling entrepreneurs, he was a man of conviction, courage and integrity whom we could ill afford to lose. A fuller appreciation of Mr. P's contribution to the hobby will appear in a later issue; meanwhile, our condolences go to his son – who assumes the helm at Beer – and his sister, who had cared for him after the death of his wife some years ago.

Bob Barlow

MODEL RAILWAY JOURNAL

Edited by Bob Barlow. Designed by Paul Karau.

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SMALL SUPPLIERS' FORUM

TRADE GRAPEVINE

CHOWBENT CASTINGS of 31 King Street, Middlewich, Cheshire, CW10 9EJ has acquired the PC Models range of etched brass kits, in both 4mm and 7mm scales. These include LNWR non-passenger coaching stock, 17 Midland vehicles, 6 Great Northern carriages and a GWR horse-box. The LNWR and Midland types will be available first in both scales, either from the address above or at exhibitions.

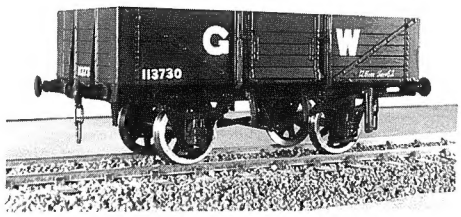
Yet more resin stonecast items from HARBURN HOBBIES of 67 Elm Row, Edinburgh, EH7 4AQ (0131 556 3233), all in 4mm. These include various pretty things like flower beds and terraced gardens, but also feature interesting utility items like stacked oil drums and some excellent lineside relay cabinets. Prices range from £1.75 to £4.25. Distributed to the trade through Peco; full list from Harburn in return for an SAE.

Anyone interested in modelling the modern scene in 4mm scale cannot afford to miss the new *BR Detailing Catalogue* from HOWES OF OXFORD. It contains just about every product directly or even vaguely applicable to the modern outline sector, including many of Howes' own Railmatch brand products – from paint and plans to etched kits and detailing packs. There are, for example, six tightly packed pages of loco nameplates alone, all of them for diesels. The 40-page catalogue costs £3.50 post free, but does include regular mailed updates through the year. Direct from Howes of Oxford, 9-10 Broad Street, Oxford, OX1 3AJ (01865 242407).

FIREDRAKE PRODUCTIONS of 34 Kingston Road, Thackley, Bradford, West Yorkshire, BD10 8PD, is offering a whitemetal casting service for modellers, clubs or manufacturers using centrifugal casting and cold-cure moulds. Andrew Eatch, the proprietor, tells us he is also making fully tested, vented moulds complete with instructions for individual modellers wishing to do their own gravity casting. Full details in return for an SAE from Firedrake at the above address.

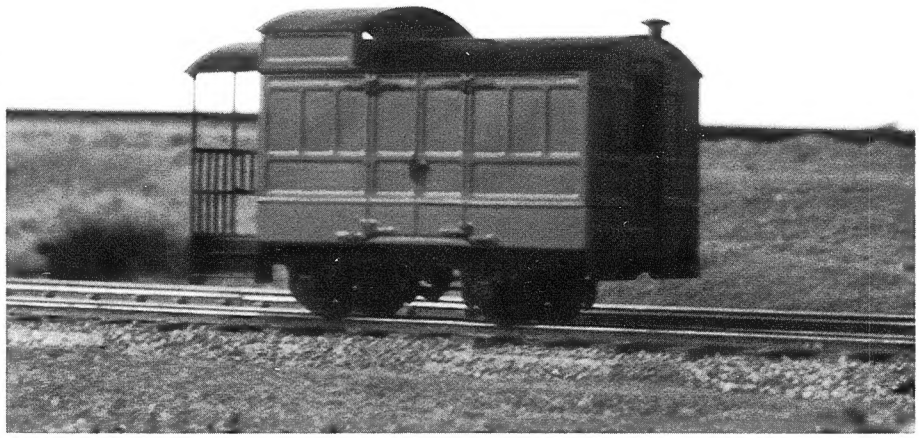
TAYLOR PLASTIC MODELS of Unit 4/1 Enterprise Centre, Wardwell Lane, Newington, Sittingbourne, Kent, ME9 7BS, have produced a dinky little resin casting in 2mm/N scale for the distinctive snowplough fairings on the Scotrail Class 158s. A pair of the fairings and dummy BSI couplings to go with them cost £3.50.

Going on sale at IMREX this year will be this digital command/control system – an idea whose time hadn't quite come when Hornby introduced Zero-1 a few years back. This piece of kit, the ZTC 511 Digital Master Controller, can be made compatible with Zero-1 (and also complies with the DCC standards now set in Europe and the USA) but offers more flexibility and better quality of control, particularly at slow speeds, says ZTC's Robin Palmer. What's more, the system claims to be able to run decoder-chipped locos over conventionally wired track simultaneously with non-digital, DC-controlled engines, and vice versa. It will be interesting to see this system, and the ancillaries designed to go with it, at IMREX, for digital control is more an inevitability than just a way forward. Price and availability will be made known at IMREX. ZTC is at PO Box 23, Saffron Walden, Essex, CB10 2XY.



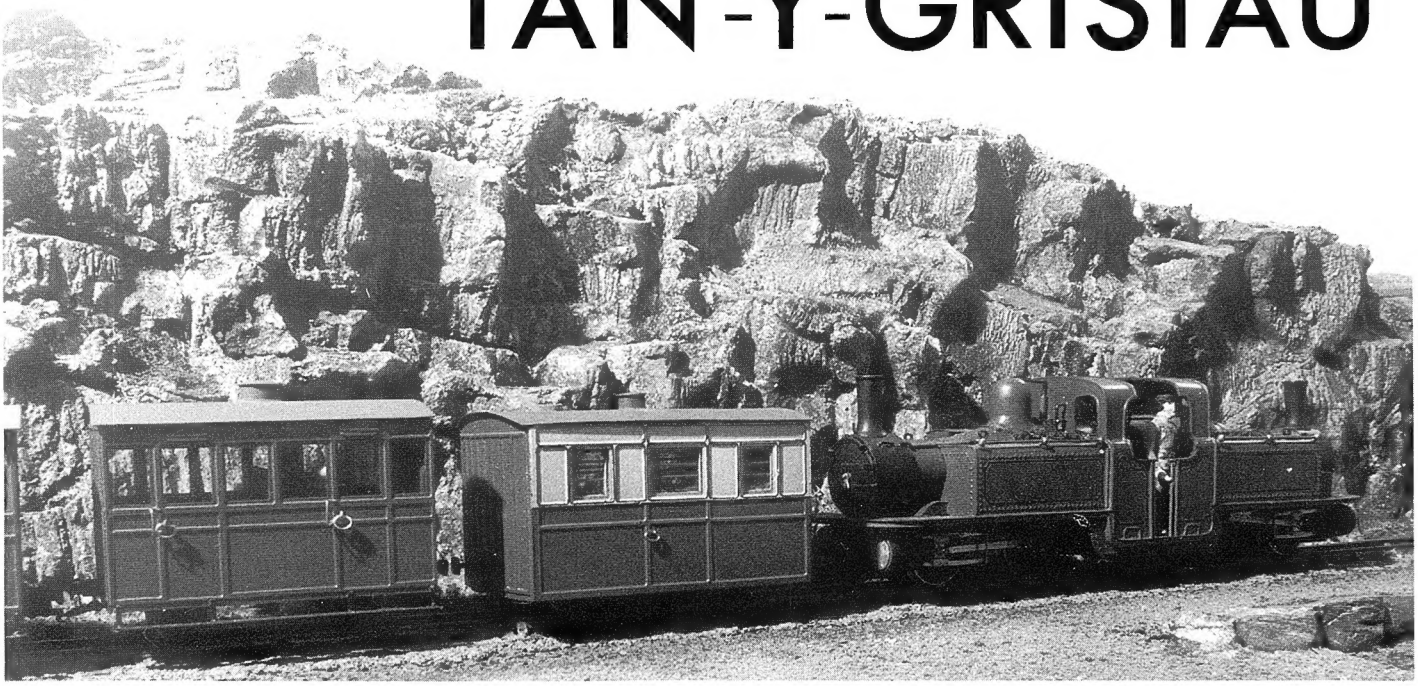
New from Parkside Dundas is an excellent injection-moulded 7mm kit for the well-known GWR 13-ton open goods (Diag 024). It comes complete with wheels and sprung buffers for £19.95. We hear that it will be followed any time now by a GW 12-ton covered goods (V33) at the same price. The kits are widely available through the retail model trade or direct from Parkside Dundas at Millie Street, Kirkcaldy, Fife, Scotland, KY1 2NL (Tel. 0592 640896).

CAVAN & LEITRIM PASSENGER BRAKE, 4mm



This attractive little 4mm scale vehicle is one of the sizeable and growing number of Irish narrow gauge prototypes steadily emanating from the BACKWOODS MINIATURES works and, like others in a wide range which includes several Donegal railcars and culminates in such monsters as the Londonderry & Lough Swilly Railway 4–8–0, it makes up into an accurate and pleasing representation of the original (writes Tony Miles). These vans, six in all, were supplied by Metropolitan in 1887 and saw service on both passenger and goods trains. The birdcage lookouts had vanished by 1914 and should not, therefore, have appeared on the CIE post-1945 green-painted model shown here on my layout 'Adavoyle' – it just seemed a pity not to add it! The instruction sheet is adequate and accompanied by a really good 4mm scale drawing. The chassis went together perfectly – though one wishes at times that kit makers, presumably to avoid recourse to contracted-out castings, would not often indulge in such items as minute axleboxes composed of two little folded etched parts. The body required rather more caution: a bit more detail on the folding of the steps might have helped and certainly the instructions should have stressed the vital importance of siting the end platform/inner buffer beam part precisely centrally; failure here would render the fitting of the delightfully etched verandah guardrails difficult indeed. Finally (and pleasingly, having met some in the past!) the birdcage in this kit went together like a dream. So, with due care, all fits snugly and this characterful little model can earn its due place among its bigger brothers in Backwoods' excellent range. The kit costs £15.50, complete with wheels, plus £1 post from Backwoods Miniatures, 16 Reivers Gate, Longhorsley, Morpeth, Northumberland, NE65 8LA (0670 788577).

TAN-Y-GRISIAU



Double Fairlie locomotive Merddyn Emrys *rolling into Tan-y-Grisiau at the head of a Blaenau Ffestiniog train. The imposing crags behind the station are all carved from various types of plaster, perhaps indicating that a rudimentary knowledge of geology should be part of the modeller's portfolio.*
Photos: BARRY NORMAN

TREVOR HUGHES's beautiful rendition of the Festiniog in its heyday is built in S scale and required manufacturing techniques as well as artistry:

I have no doubt that, given careful thought, most people could identify events in their past which have been milestones in one form or another. In my chosen hobby, one such event took place in the Junction Inn at Denshaw some 17 years ago. It all began very innocuously some years before that, when my good friend Harry Maden had made a chance discovery of an excellent modelling material on the moors not far from his home. This was the soft stone with an uncanny resemblance to slate which lay, by the ton, under the peat moorlands making up the Pennine ridge; I had used it in a limited way when constructing my model of Dinas Mawddwy (*Railway Modeller*, February 1979). Fellow modeller Malcolm Clarke had seen the advantages of this material and wished to use it in his own narrow gauge project. So, after a pleasant interlude gathering some, we found ourselves taking liquid lunch in the Junction Inn.

The ensuing conversation revolved around narrow gauge modelling, past and present. Out of it came the realisation that our past efforts had suffered defects and limitations which made the end product less than ideal in representing the Welsh narrow gauge scene. We felt we could do much better, and that the subject matter deserved much better treatment than it had been given in the past. So it was that the Tan-y-Grisiau project was born.

Many things happened in the following 17 years. There were job changes, other interests and other layouts built, all of which conspired to slow things down. Although I eventually completed the model as a solo project, I will break with the tradition of rolling the credits at the end to pay tribute to the assistance I have received. First to Malcolm, who supported the project in the formative period, when we established the design criteria, conducted research and field survey work, and constructed the baseboards; to Peter Kazer and Dave Pennington who gave valuable advice and put their skills to good use in assembling the etched brass rolling stock kits I had designed for the layout; and to the rest of the members of the Rochdale Model Railway Group who have given me constant support at exhibition time and allow me to store the finished product in the limited space in our clubroom. Without them, TYG, in model form at least, would not exist.

Let us look for a moment at the basic concepts around which the layout was designed. The aim was to portray one of the intermediate stations on the Festiniog Railway at the height of the Spooner era, with its long trains of bogie vehicles, empty slate wagons tailing behind and Fairlie Patent double boiler engines at the head. We would even have gravity-operated slate trains for good measure. It was intended to engage in what we describe as display running. There was not the scope — nor did we have the desire — to indulge in shunting manoeuvres in front of an audience. To this end the track plan was arranged for continuous running, with a passing loop at the front and a set of storage sidings at the rear. This would also have the advantage of allowing the layout to be operated by one person for limited periods of time at exhibitions. It had to

be a recognisable replica of a part of North Wales, a scene through which trains happened to pass. Following from this, it also had to be an accurate representation, with any artistic licence or modelling compromise kept to a minimum. It had to work and continue to work without operator intervention. I wanted to continue the use of S scale with a track gauge of 23/64ths of an inch, which within the space available would give the best compromise – large enough to achieve reliable running, yet small enough to exploit the scenic potential. The use of a specialist scale meant that everything would have to be scratchbuilt, but this task was to be eased by the use of mass production techniques such as photo-etching and repeat casting in whitemetal, using rubber moulds taken from brass masters.

Before any construction work could start on the layout, it was necessary to make a complete survey of the existing station at Tan-y-Grisiau. This was done in the summer of 1977, when much of the original line was still intact. In addition, research time was spent in the National Library of Wales at Aberystwyth and in the County Record Offices at Caernarfon and Dolgellau. Over the years we had amassed a considerable portfolio of photographs, and from all this information we were able to reconstruct most of the area as it must have been in the early 1880s. There were still some gaps in our information, notably about the rear elevation of a group of cottages just below the station at the Portmadoc end; we had to decipher this from a very indistinct photograph in the Caernarfon record office, but we were confident that the remainder was accurately drawn.

The next stage was to try and fit all this into the space at our disposal. Two major decisions were made at this time; one was to bring the two ends of the layout back into the same set of storage sidings, effectively completing a full circle, and the second (and less obvious) one was to reduce the length, both of the sidings at Cwm Orthin, and in the cutting immediately before them. This kept the overall length of the layout down to 12ft and meant that it would fit both in storage and in a 17cwt van for transport. All the baseboards were made a constant 4ft in length and arranged to fit in double stack crates for storage and transport.

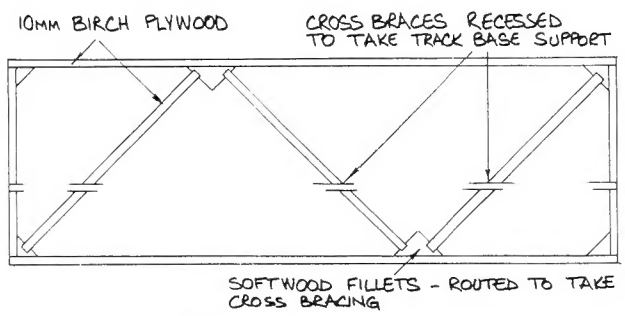
The original survey had been carried out by setting a chain line down the existing track bed and marking all the set-off points. The first five chains of this were transferred directly to the three baseboards comprising the front of the layout. As can be expected with an arbitrary line drawn through 260 yards of countryside, there were features which did not fit comfortably within the confines of the baseboards. One was a small cottage at the front of the layout of which only the rear 5ft would have been on the model, so this was omitted. Another area was a cottage group at the rear of the layout, which was eventually constructed in three-quarter low relief, in order to keep it in the correct position – a modest alteration which has not proved very noticeable and has provided space to conveniently accommodate one of the control panels.

With the layout firmly drawn on paper, it was time to turn our attention to baseboard construction. The final plan called for eight equal sized boards. To make them easy to transport, it was intended to bolt end plates to each one, and fasten the plates together one above

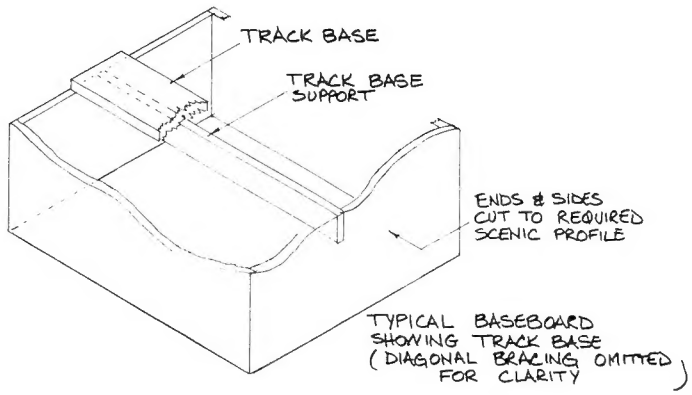
the other by substantial toggle clips. Any combination of boards could be attached together if so desired and the assembly would be well-protected against damage when being transported. When at an exhibition, the layout is supported on a sub frame made from 1in square steel tubing, welded together and with screw adjustment in the bottom of each support. The baseboards depart from accepted practice by being constructed almost entirely from 10mm birch plywood. Both front and rear edges are cut to the scenic profile and at the front of the layout the bottom edge is extended downwards to cover the top of the curtain. Stiffening strips run the full length, front and rear, and cross supports are arranged as shown in the accompanying sketch.

Some years into the project, we were able to make the acquaintance of Ian Pusey, when he was doing one of his excellent demonstrations of track building at the MRC Easter show. Ian had produced some whitemetal chairs which were very close to the rectangular pattern used by the FR from 1878 onward; these were used together with some of my own whitemetal castings specifically representing the curved chairs which had been used from 1868 onwards. All have been assembled using Ian's technique of gluing directly to the sleeper with impact

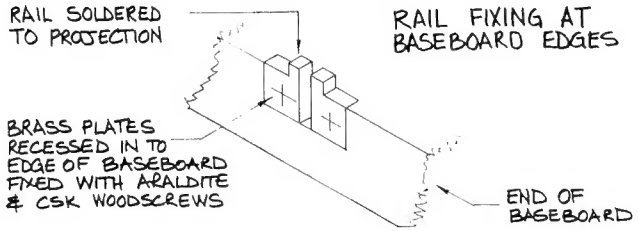
The most unusual station building drawn by Mike Raithby and prepared from site suveys and the official FR drawing.



BASEBOARD - PLAN VIEW SHOWING DIAGONAL CROSS-BRACING

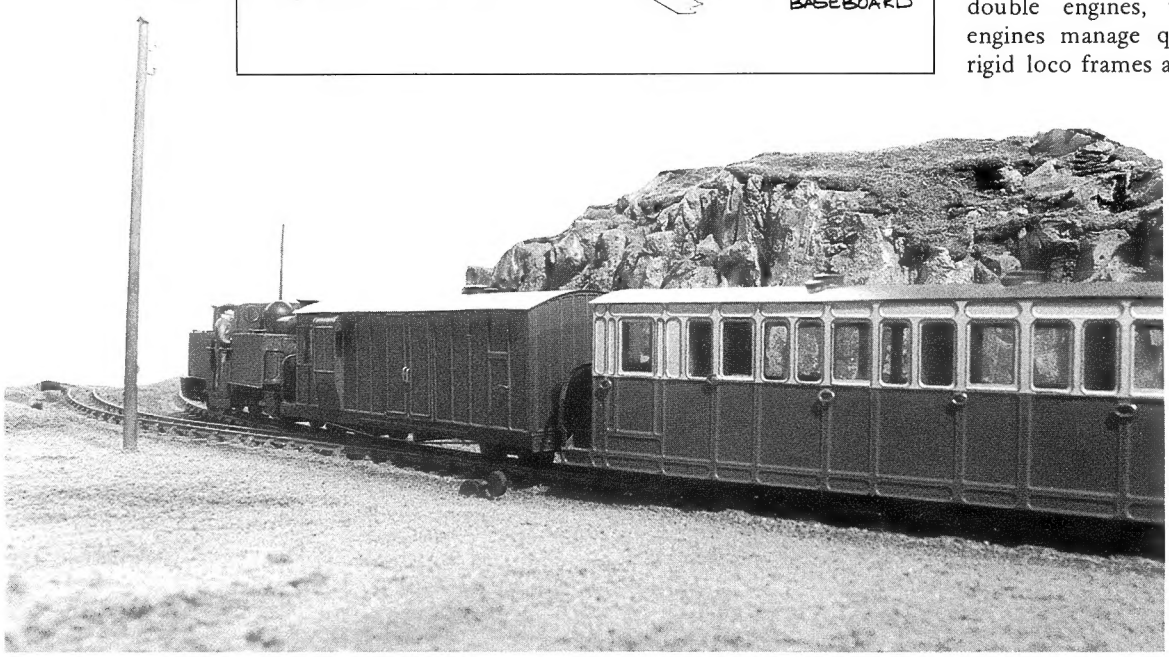

TRACK BASE
TRACK BASE SUPPORT
ENDS & SIDES CUT TO REQUIRED SCENIC PROFILE
TYPICAL BASEBOARD SHOWING TRACK BASE (DIAGONAL BRACING OMITTED FOR CLARITY)

ALL MATERIALS - 10mm BIRCH PLYWOOD


RAIL SOLDERED TO PROJECTION
RAIL FIXING AT BASEBOARD EDGES
BRASS PLATES RECESSED IN TO EDGE OF BASEBOARD FIXED WITH ARALDITE & CSK WOODSCREWS
END OF BASEBOARD

adhesive; although individual fastenings do not have a great deal of strength, the collective effect is more than equal to the task. Almost immediately after the track was laid, the layout had to be put into storage for some years. During this period, although it was subjected to wide variations in temperature and humidity, no problems were experienced with track stability. The glue fastening is supplemented at strategic points by brass pins, driven into the baseboard and with rail soldered on top; this helps to maintain the track gauge at point crossings and switch blades. At some baseboard joints a more solid form of fastening is employed — brass plates screwed and glued into recesses routed into the edge of the board, the rail soldered to a projection on the top edge of the plate. Point crossings and closure rails were all jig-assembled prior to fastening down to the sleepers, which ensured that all the flangeways were correct and that the crossings lined up properly. Much time and effort was spent getting the trackwork into first-class level condition.

At this stage my efforts turned to the production of locomotives and rolling stock. The final evolution of my locomotive construction is more fully detailed in MRJ No. 42. Suffice it to say that the basic design philosophy includes split-axle current collection, phosphor-bronze bearings, ball bearing end thrusts, steel tyres and stub axles and tyres in one piece whenever possible. Three-point suspension is used on the bogies of the double engines, while the four-wheel engines manage quite successfully with rigid loco frames and beam compensated



FR No. 7 — the first of the now famous double boiler engines — heading a down train through Tan-y-Grisiau. The first two vehicles are bogie van No. 4 and coach No. 14.

tender chassis. All my tyres are turned with a standard form tool designed to match the tread profile to the rail, putting the wheel tread in contact with the rail head over a large part of its surface. With low mechanical resistance in the locomotives, high-efficiency motors and pinpoint bearings in the stock, there is very little current drawn from the controller and consequently very little problem with dirt on the track. More detailed comment on the principles of controller design and layout wiring is beyond the scope of this article, but if anyone is beset by major problems in this respect, I will be happy to give advice or assistance. The editor has kindly agreed to pass on any correspondence to me (provided, of course, that you do him the courtesy of including a postage stamp and blank envelope with your request).

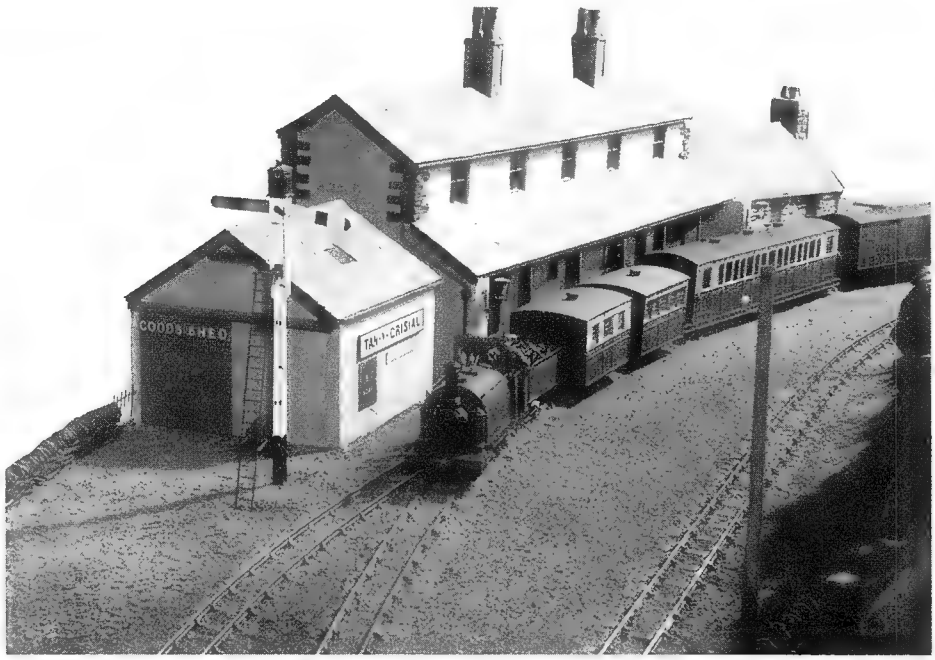
The rolling stock for the project was something which caused some concern in the early stages, mainly because of the numbers required. By limiting the size of the storage sidings, an upper limit could be placed on the amount of rolling stock the layout could accommodate, but even so it was obvious that mass-production techniques would be needed. Etched brass was identified as the best solution to the coaching stock requirements, and also for the iron-framed slate wagons. I wanted the coach sides to be etched in 15-thou brass, slightly thicker than normally used in 4mm scale kits, to give the stock better resistance to handling and reduce the need for internal bracing.

Both these buildings are made from plaster castings showing the considerable versatility of the medium. The stonework on the station building to the right is real stone, cut wafer thin and inlaid on the plaster shell.

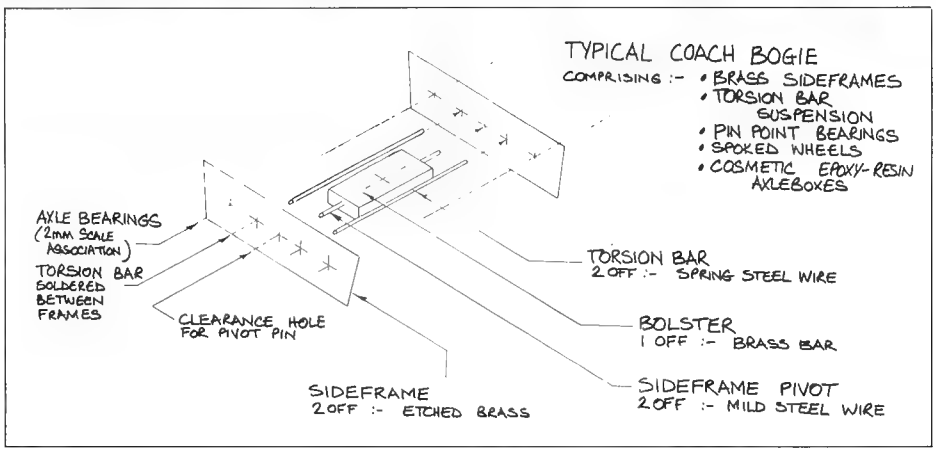
The station building stands on high ground above the village. Erected only a few years before the period modelled, its cement rendering would have had little time to weather, even in the wet climate of the Vale of Ffestiniog.

I spent some time finding a supplier who could successfully carry out a quality job using my own artwork, which was an interesting exercise to produce. In consultation with my supplier, I decided to use two sheets of clear drafting film with black etching ink — one sheet for the front face of the work and one for the rear. This doubled the amount of drawing, but reduced the cost of setting up. Allowances have to be made for undercut, the size of the production camera to be used, which governs the reduction ratio to be employed between the artwork and the finished etch. I limited the etching process to those items which were panelled or had complex shapes, leaving out such things as roof, floors or compartments which can be cut in quantity from sheet brass without difficulty. In this way the cost per coach was kept to a minimum. Etching is expensive to set up in the first instance, but the rewards can be high, both in time saved and in the maintenance of quality and consistency.

My own kit of parts consists of two identical 12in squares which together provide the major components for three bogie coaches, two bogie brake vans, one first and one third class Ashbury four-wheel coach, one first and one third class Birminghamham four-wheel coach. In addition there are 14 iron-framed wagons, a mixture of 2-ton and 3-ton capacity, plus a number of signal parts and useful odds and ends. I had six sets of these etched, giving me a complete set of bogie coaches and sufficient iron-framed wagons. The accompanying drawings should give some idea of the assembly methods used, plus an insight into the torsion bar suspension method used on



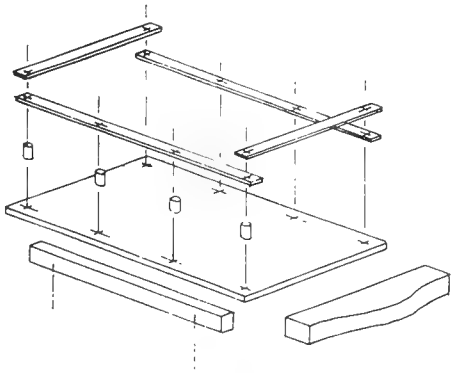
The station from a more familiar angle. The wagon turntables which were such a feature of later years were not installed at this time.


TYPICAL COACH BOGIE
COMPRISING :-
• BRASS SIDEFRAMES
• TORSION BAR SUSPENSION
• PIN POINT BEARINGS
• SPOKED WHEELS
• COSMETIC EPOXY-RESIN AXLEBOXES
AXLE BEARINGS (2mm SCALE ASSOCIATION)
TORSION BAR SOLDERED BETWEEN FRAMES
CLEARANCE HOLE FOR PIVOT PIN
TORSION BAR 2 OFF :- SPRING STEEL WIRE
BOLSTER 1 OFF :- BRASS BAR
SIDEFRAME 2 OFF :- ETCHED BRASS
SIDEFRAME PIVOT 2 OFF :- MILD STEEL WIRE

the bogies. Extra items required to complete the kits were wheelsets, in my case specially commissioned from the late Mike Bryant. At the time Mike was supplying 2mm scale wheelsets and was amenable to producing a similar version for me, slightly larger in diameter, six-spoked and with an axle length of 13.5mm, pinpointed to fit the top-hat bearing produced by the 2mm Association. Although Mike is no longer with us, his product range lives on, and again, if anyone is interested, I can put them in touch with a new supplier.

The second stage in the mass-production of stock was to complete the slate wagon fleet by building around 50 of the traditional wooden-framed wagons. This called for a composite technique – cast whitemetal for the floors, ends and solebars, and jig-drilled styrene strip for the slats. The casting techniques are fairly straightforward, and require that the underframe parts are first made up in a material which is non-porous to the moulding rubber; I found it convenient to mill from brass bar. The masters consisted of a side with two axleboxes, one end and a floorpan. As well as all the obvious detail, I also made eight centre-pop marks on the top surface of the floor, to enable the final cast floors to be drilled to accept brass pins which I intended to use as uprights for the side slats.

The mould material was Alec Tiranti silicon RTV31. You don't have to worry about the technicalities of the various different types – I used the red stuff. In order to make the two-part mould, it is first necessary to decide on a suitable joint line. This has to be at a point where the slight mark can be easily camouflaged. Push the part that is to be copied into a bed of Plasticine up to the chosen joint line, then build four low retaining walls out of styrene sheet. The rubber should be mixed as per the supplied instructions, and poured into the first half of the mould. When this has cured, remove the side walls, leave the master in the rubber, remove the Plasticine and dust the surface of the joint with talcum powder or graphite powder. Four more retaining walls are needed and the second half of the mould can be poured on top of the first. It is very important to locate the two halves together and this is done by means of dowels, which are made by pushing a blunt pencil into the Plasticine in the initial stage; do this in about four positions around the mould, about halfway between the edge and the master, and these depressions will become raised projections on the first half of the mould, locating with matching depressions in the second half.



The final item to consider is the ingate, which for effective gravity casting needs to hold as much metal as the casting itself. It goes without saying that it should be on the top of the mould! Try to arrange the ingate so that the resulting sprue can be removed without damaging any nearby detail; I normally leave the gating arrangements until last, and cut a piece or rubber out of one side of the mould with a craft knife. The first trial casting in the mould will determine whether the gate is of sufficient size. Some complex shapes may also require venting in order to get the metal to flow into all the corners; this is best determined from the initial casting. If there are any areas where the metal does not flow, then use a sharp scalpel to cut a tiny vee-shaped groove from the offending area to the outside of the mould. Be wary about cutting the groove too deep

Some of the distinctive four-wheel coaches with their visibly low centre of gravity.

The differences between the primitive four-wheelers and the sophisticated bogie coaches is very apparent here.

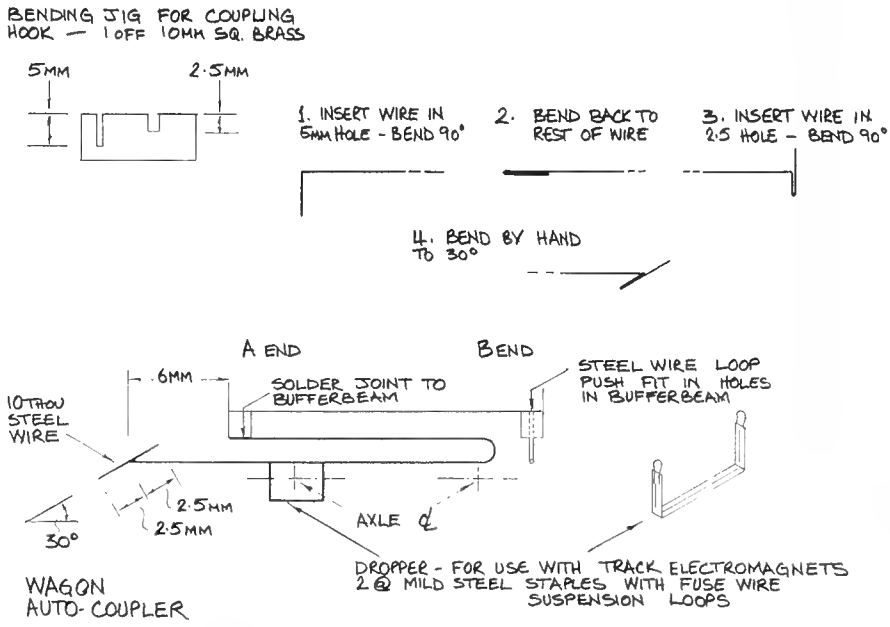
– it is very easy to get a situation where all the metal pours out of the vent.

For most of my casting I tend to use a bismuth-based alloy which has a low melting point, enabling it to be melted successfully using the old style gluepot where boiling water in the lower pan provides the necessary heat. Other suitable alloys are solder and bits left over from the last kit. These will require a more substantial crucible to hold the metal, plus direct heat – in my case from the gas stove in the kitchen. Basic safety precautions must be observed: the work surface should be covered with something which will contain spillages, all the mould material must be dried very thoroughly (steam generated in the mould will have explosive properties); wear gloves, eye-shields and reasonable protective clothing in case anything does go amiss.

Once the casting had been completed, the floors were drilled to accept eight brass pins, superglued in place, point upwards. The slats were then drilled to fit over the pins. A jig was necessary for this operation, and a considerable amount of 10-thou styrene strip was used in the process. Each of the slats is kept apart from its fellows by means of spacing bobbins. To represent these, I used tiny pieces of PVC wire insulation previously stripped in long lengths from 25swg single-strand wire. There had to be two sizes of these spacers, shorter ones at the corners where the two slats overlapped. It helped enormously to make the two sizes out of two contrasting colours. To finally complete the wagon, another set of Mike Bryant wheels and top-hat bearings were required, the bearings in this case pressed into holes in the back of the axlebox.

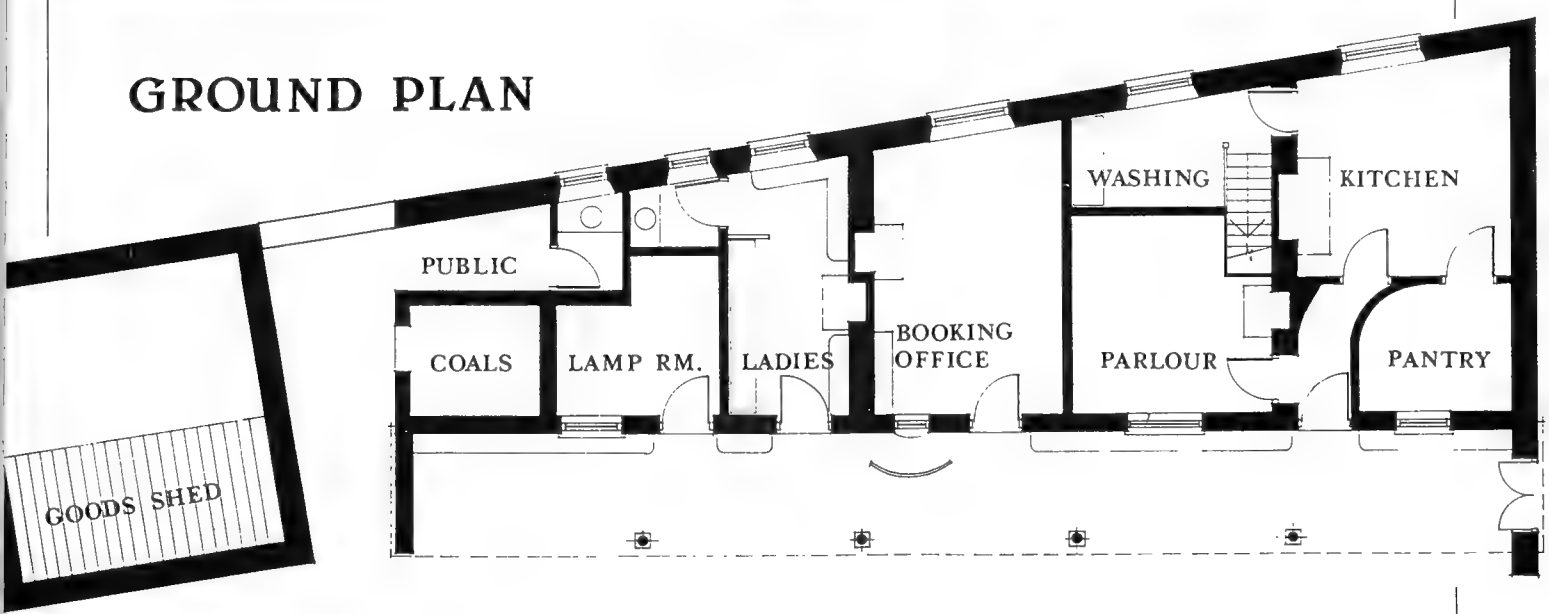
After all this mass production, it was really quite a change to build a few one-offs by more normal techniques. At the moment, the layout uses coal wagons for local traffic and granite-carrying wagons for the workings down to Brookes Quarry at Moelwyn. These wagons, together with the shunting locomotives, are equipped with a form of hook and bar coupling. This is derived from the Sprat & Winkle type but utilises the materials and construction methods more normally associated with the Alex Jackson type – the sketch should make the system clear. The bending jig for the coupling hook uses the same dimensions as the 4mm version of the AJ coupler. The main difference is that my hook is bent in one plane only, there being no requirement to engage with another similar hook.

At the same time as all this wagon construction was taking place, I was indulging in plaster casting to make the basic shells of the cottages. This was done together with the assembly of dry stone walls from thousands of separate pieces of the shale. There is nothing really complex about the construction, and the techniques have been around for many years. These use scribed and painted


BENDING JIG FOR COUPLING HOOK – 1 OFF 10MM SQ. BRASS
5MM
2·5MM
1. INSERT WIRE IN 5MM HOLE - BEND 90°
2. BEND BACK TO REST OF WIRE
3. INSERT WIRE IN 2·5 HOLE – BEND 90°
4. BEND BY HAND TO 30°
A END
BEND
6MM
SOLDER JOINT TO BUFFERBEAM
STEEL WIRE LOOP PUSH FIT IN HOLES IN BUFFERBEAM
10THOU STEEL WIRE
2·5MM
2·5MM
30°
AXLE ℄
DROPPER - FOR USE WITH TRACK ELECTROMAGNETS
2 @ MILD STEEL STAPLES WITH FUSE WIRE SUSPENSION LOOPS
WAGON AUTO-COUPLER

Most of the ground on which the station was built was formed by cutting back the hillside. Imposing dry stone walls held back the fill and provided a right of way through the village.

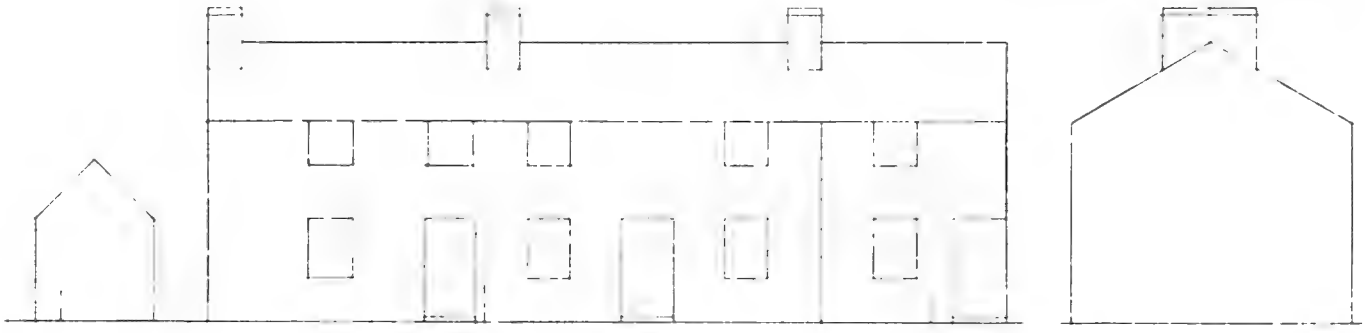
GROUND PLAN


GOODS SHED
PUBLIC
COALS
LAMP RM.
LADIES
BOOKING OFFICE
WASHING
KITCHEN
PARLOUR
PANTRY

A short up train headed by the Vulcan Foundry engine No. 9. The tiny firebox could only accommodate a 1012 Portescap motor; however, in common with all the other engines, the driving bogie has phosphor-bronze bearings, precision cut double-reduction skew gears and ball-bearing end thrusts.

Seven feet of this dry stone wall containing many thousands of pieces of mudstone shale were required to recreate the scene in miniature.

A typical outline sketch taken from survey dimensions. This is all that is required to produce the casts from which the moulds are made.



The open-cab four-wheeled loco Little Giant. *These early locomotives built by George England had been displaced from most mainline duties by the 1880s. However, they still found employment as shunting engines. Here the 'top shunter' would be running down to the granite quarry.*

The landscape was not just part of the landscape, but intimately threaded into the community. This view shows how close the relationship really was.

plaster to represent stone walls, together with individual pieces of stone where appropriate. My article in *Model Railways* in June 1972 described the early beginnings, was developed in my description of Mawddwy Road as mentioned earlier, and finally brought up to date by Peter Kazer in his description of Corris in MRJ No. 66. If you should wish to experiment with the method, I suggest that you cast a block of board finish plaster, scratch on the surface with a scriber point and then pick out the individual stones with water colours. There is not very much to say about the process, so I'll allow Barry Norman's photographs to do the rest.

The scenic texture is formed by a method I have been using for many years. The basic shape is created from expanded polystyrene and covered with a layer of plaster, reinforced by scrim bandage. This

An interesting combination of plaster work and individual stones. The rough cement rendering was reproduced by casting the plaster against a sheet of waterproof abrasive paper.

is painted with PVA glue and then scenic scatter materials are dusted over the top – something that can become expensive unless you use dyed sawdust as an undercoat. Your local sawmill is the best place to obtain this, usually without cost. The main objection to the material is that, no matter how you try, it always looks like dyed sawdust, and this is because many people use it on its own, or never sieve it down to a fine dust. It is necessary to put the raw material through a fine flour sieve in order to produce an acceptable particle size. For the top coat, appropriate materials from the Woodland Scenics, Noch, Heki and Faller ranges were used. Some of this material was in the form of fine nylon fibres, and very pleasing effects were obtained by using a spray technique to deposit these on the layout. Many years ago I had seen photographs of

Where the stone walls are visible on both sides, they have been reproduced exactly as the prototype, faced on both sides and with rubble filling. The only concession made was to incorporate PVA white glue with the fill during assembly.

Although the majority of rockwork is laboriously carved from plaster, here and there are small outcrops where the real thing has been used. The piece in these pictures maintains a link with the real railway – it was picked up close to the line many years ago.

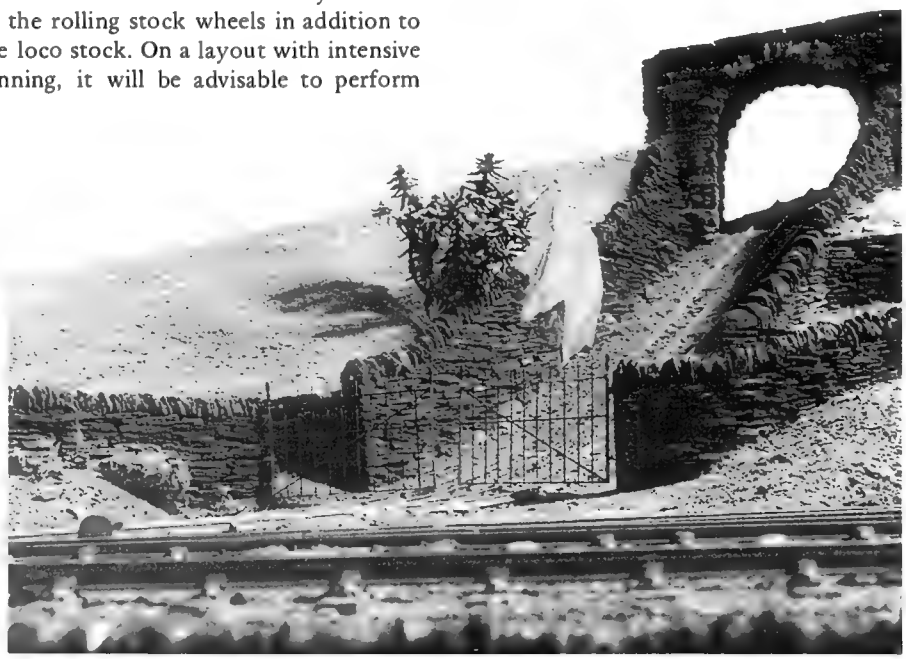
a diorama, constructed by an American modeller, where electrostatic deposition of flock had been accomplished. This gave a realistic impression of individual blades of grass, but was only achieved by using apparatus more appropriate to the physics laboratory. I had made some tentative experiments along these lines in the past, but it was only my participation in the MRJ Exhibition that convinced me to use Martyn Welch's method, which involves shaking the particles inside a polythene container and then squeezing the sides of the container to propel the charged particles through a nozzle in the top (see Martyn's article in this issue). A very pleasing effect is obtained, with a fair percentage of the particles standing on end in a glue base previously applied to the layout. Like all electrostatic experiments, it helps to do it on a warm, dry day. On damp days the static charge is low, and will be overpowered by the force of the air blast.

My final paragraph deals with the requirements for good running at exhibitions. It took me many years before I discovered that there is no substitute for good engineering. There is no point in paying for fancy electronic solutions when the probable cause of the problem is in the locomotive or on the track. I have previously mentioned that the ideal for any locomotive is to be high in mech-

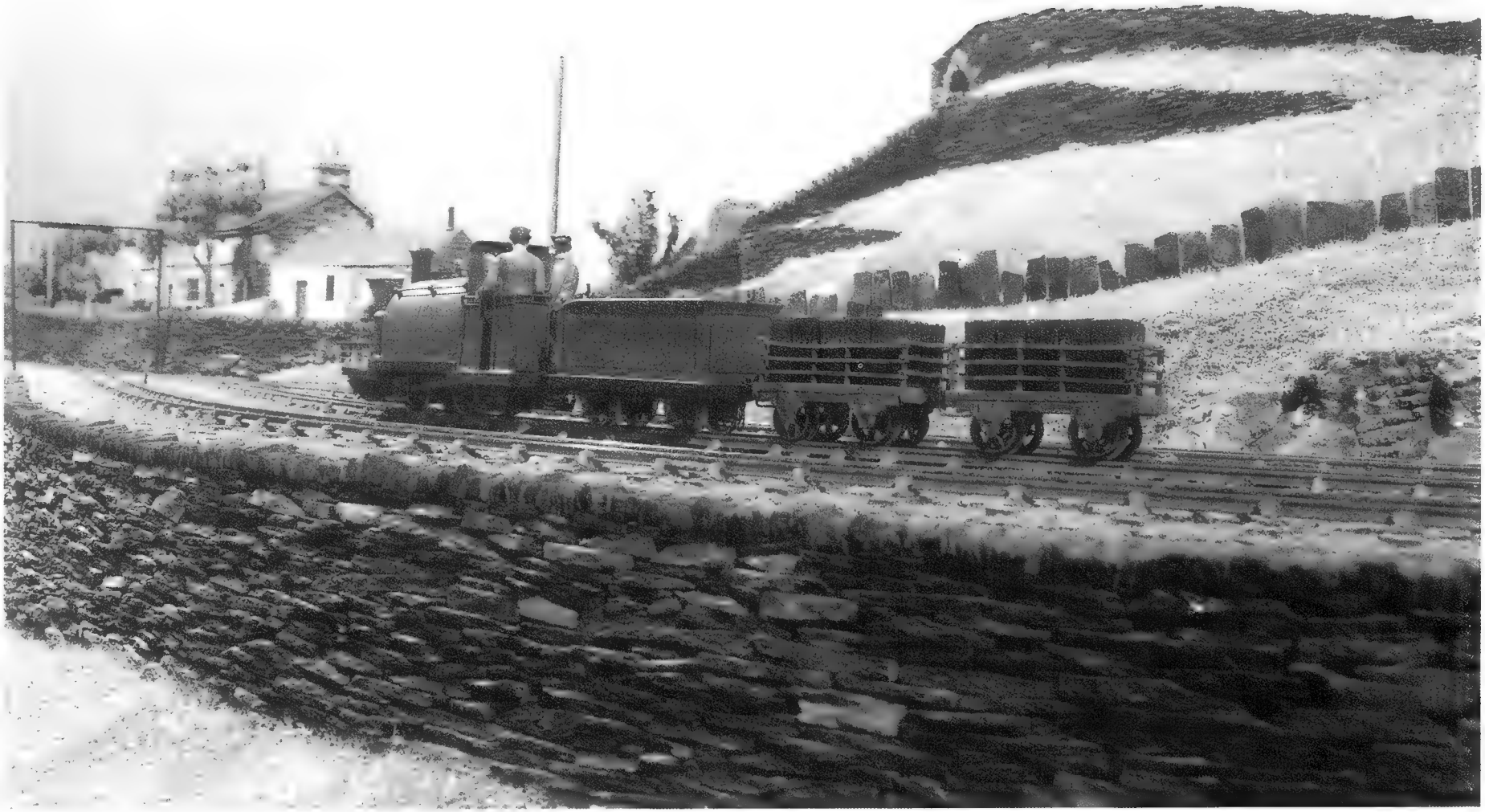
The rope gantry is an unusual feature and provides much curiosity at exhibitions. They were originally provided at every overbridge to warn the gravity train brakesmen of impending danger.

anical efficiency and low in motor current requirements. These combined, result in a reduction in the rate at which dirt builds up on the track and on the rolling stock wheels. This means that cleaning needs to be done less frequently. My own double bogie engines have now run for 25 exhibition days each, and neither has had any attention, apart from occasional gear lubrication. I always use a small cloth pad soaked in an alcohol-based solvent when track cleaning – methylated spirit is ideal. If the track has not been used for some time, then it may be necessary to lightly polish the rail top with fine abrasive paper – 1200 grit wet and dry, obtained from your motor accessory shop. Remember that there will be occasions when it is necessary to clean all the rolling stock wheels in addition to the loco stock. On a layout with intensive running, it will be advisable to perform this additional chore every ten exhibition days. Plastic-tyred stock tends to be a poor performer in this respect and requires attention more frequently.

The smithy and incline foot at Cwmorthin slate quarry.



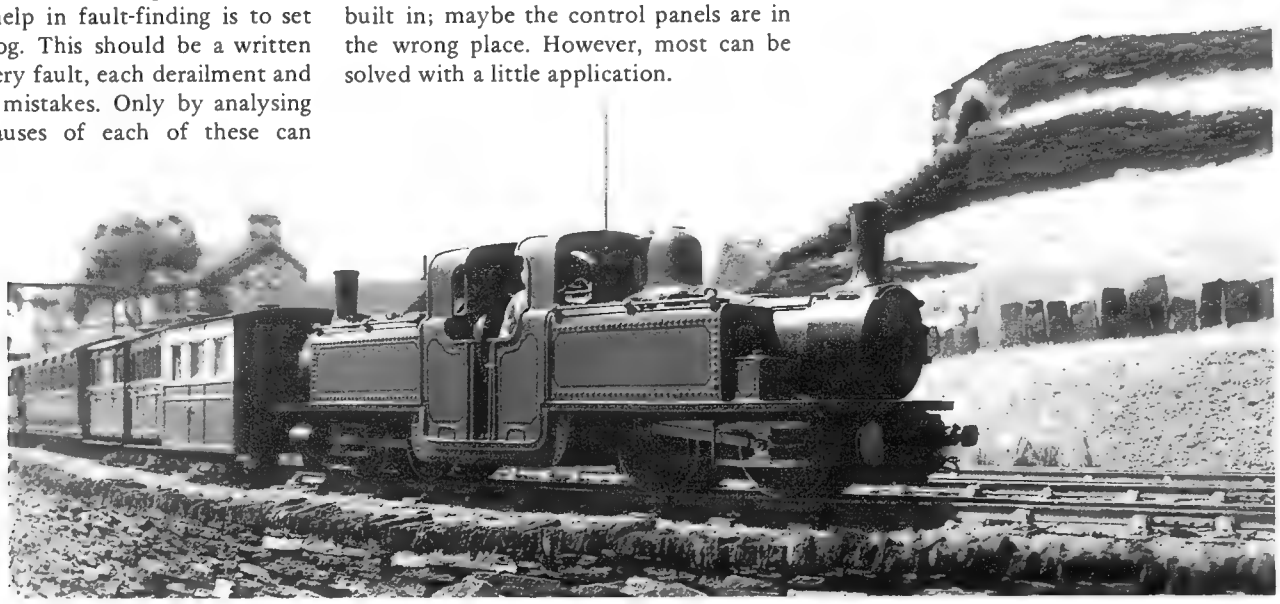
Barry's camera catches the down gravity train as it rattles through on its way to Portmadoc.



Top shunter and a couple of loaded slate wagons in the sidings at the foot of Cwmorthin incline.

There is no point in meticulously cleaning all the track, when the stock is going to redeposit a fresh layer of grime in the first hour of running. A final item which will help in fault-finding is to set up a fault log. This should be a written record of every fault, each derailment and all operator mistakes. Only by analysing the root causes of each of these can progress be made towards fault-free running. Some mistakes are difficult to overcome; operators falling asleep after lunch, for example. Some problems are built in; maybe the control panels are in the wrong place. However, most can be solved with a little application.

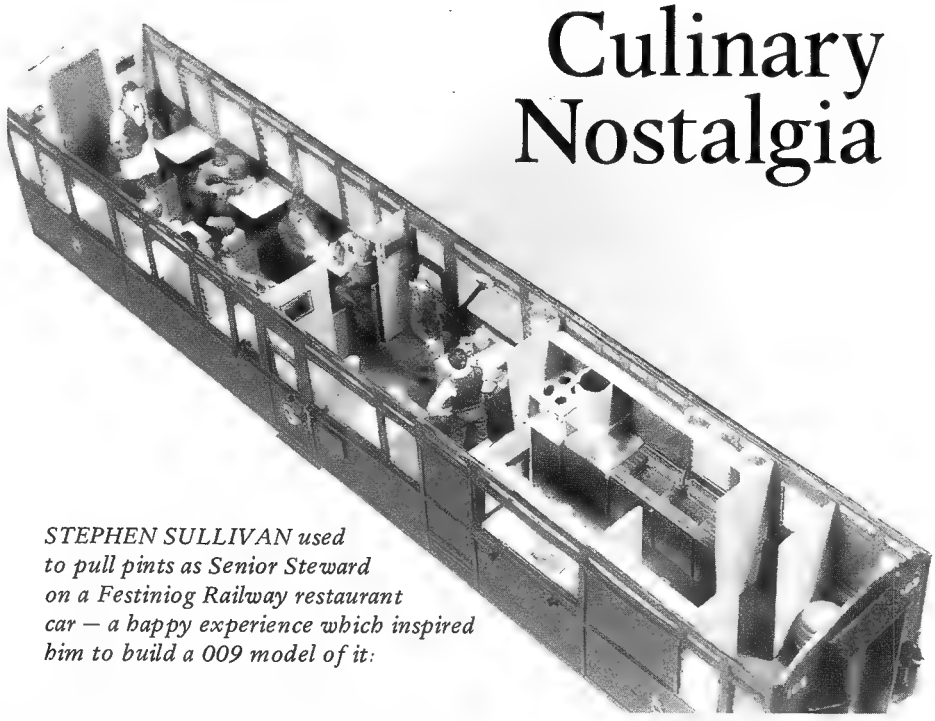
Thank you for staying with me this far, and I wish you success in your modelling efforts.



Dave Pennington's exquisite craftsmanship shows to good effect in this shot of Merddyn Emrys *at the head of a long train at Cwmorthin. Trailing behind will be the empty slate wagons returning to the many quarries in the Ffestiniog area.*

Tan-y-Grisiau can be seen at the **Ffestiniog Railway***'s own model railway exhibition at the Welsh Highland Railway Flour Mill in Portmadoc on the weekend of 6/7/8 May (May Day Bank Holiday). For further details call the FR at Harbour Station, Portmadoc on 01766 512340. It will also be at the* **Chatham Show** *(10/11 June) and* **Liverpool,** *August Bank Holiday.*

Culinary Nostalgia



STEPHEN SULLIVAN used to pull pints as Senior Steward on a Festiniog Railway restaurant car — a happy experience which inspired him to build a 009 model of it:

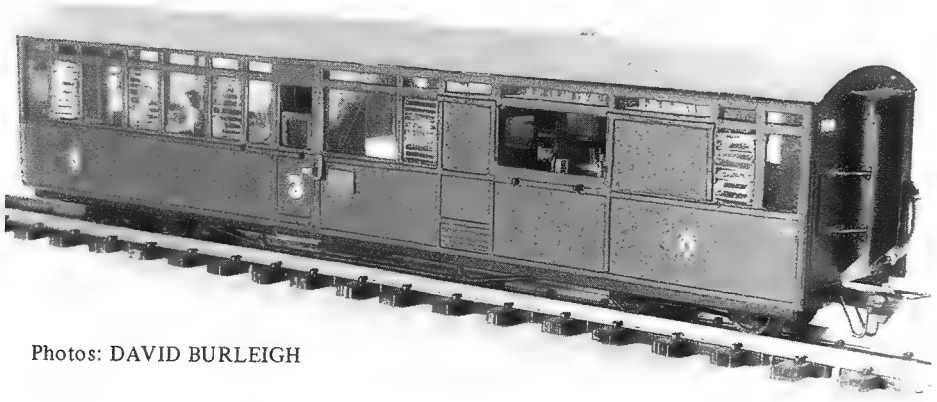
Perhaps the important question with this model is not so much how I built it as why. It is, of course, a labour of love – an exercise in nostalgia – and I hope readers will appreciate something a little different from the traditional blow-by-blow account.

In the late sixties and early seventies, I was one of the select band of Festiniog volunteers who stayed at the Meirion Cafe at Minffordd, where, in the evenings, we would sit and discuss Life, the Festiniog and Everything in the front room, to the sound of an occasional late vehicle on the A487. From Permanent Way volunteer, I went on to work on the buffet cars, eventually becoming a member of the seasonal staff and (in summer 1971) Senior Steward of 103. No. 103 (none of this *Charles Spooner* business) was the buffet car designed to go with the Centenary Coaches, so called because construction of the series started in 1963, although we always used to call them 'barns' – perhaps as a compliment to their roomy interior. Among the more repeatable memories of those summers are the frantic competitions between the crews of the three buffet cars to see who could get the biggest daily take. They were a hectic couple of years, and I have always wanted to build a model that would recapture them. After 21 years, I decided that I couldn't put things off any longer. A week of the summer 1992 holidays was set aside and the kitchen table booked; the plan, No. SD/C103, one of a large range available from the FR at Harbour Station, Portmadoc, was sorted out, and the photograph collection raided.

The sides were cut from .015in Plastikard. The body had to be drawn out with the base towards the edge of the Plastikard, because the complicated tracery of windows and toplights needed all the support it could get. I marked these windows out with a scriber in each corner, and felt for the hole with the knife-blade, cutting right through the plastic so as not to put any strain on the material such as happens when windows are popped-out along an only partially-cut line. The beading was built up from Microstrip. My 1970 photographs do not seem to indicate that the body panels along the window-line were recessed as the 1985 plan indicates, and I can only suggest that a rebuild must have taken place at some time; the arrangement of windows at the Blaenau end of the car is also different from that shown on the plan. Other details include the door bumpers and a small ventilator for the fridge. The sides were sprayed with Duplicolour red oxide primer, and then given a couple of coats of Humbrol German Purple. The flat-top '3's on the passenger doors were from the PC Pressfix LMS coaches sheet, although the recent press-on transfers from Peter Blackham are accurate copies of the Festiniog type, and would be better. I could not find a suitable 'Private' for the stewards' door, and it is in fact labelled 'Guard'; nobody has noticed so far. The sides were then varnished and set aside.

The fragile sides were backed with clear plastic. Slaters no longer make the 20-thou Plastiglaze that I used for an earlier model of No. 105, but I was able to find an unbranded equivalent in a Bedford ironmonger's. It has a soapier texture and is less likely to shatter along the edges of the cut like thick Plastiglaze used to do, but it's still a terror to cut. Holes needed to be cut for open droplights, the 'serving hatch' on the Dduallt platform side (see in use in a wonderfully nostalgic photograph on p. 75 of Norman Gurley's *Narrow Gauge Steam out of Portmadoc*), and for the windows that are to have their glass louvres in the open position. Closed ventilators, and the droplight frames, were simply scribed onto the glazing. It's probably easier to saw these holes out, but I used a craft knife, and I'm not going to do so again. Farish N gauge coach bogies were mounted to a floor of .040in Plastikard, but Festiniog bogies are now available from Dundas.

The sides were glued carefully to the glazing, which was then assembled to form a box with two ends made conven-



Photos: DAVID BURLEIGH

tionally from Plastikard. Then the fun began. The interior was fitted out on the ship-in-a-bottle principle, starting with the partitions, passenger seats and tables and working up through the shelves, fridge, boiler, cooker, sink with double drainer, bar counters with shelves and glass fronts, to the beer pump – all from bits of Plastikard and wire. Here I must thank my son Raoul, aged 8, whose patience was big enough and fingers were small enough to place all the tiny pieces with tweezers onto drops of Superglue, some of which I placed in the most inaccessible spots.

A set of Preiser unpainted sitting figures was raided for characters in likely pose with beer glasses, and a couple of waiters added from the passengers set. The waiters actually are much more smartly dressed than we used to be in our ghastly red PVC jackets, and look more like a modern Festiniog crew. There was a time when 103 had real cups and saucers, incredibly enough; but they were purloined by souvenir-hunting passengers. My passengers refuse to drink tea from paper cups, so there aren't any. Tucked away in Preiser accessory set No. 592 are a couple of sprues of individual bottles, and there are probably more of these in the coach than one would have seen at the time. Glasses (real beer glasses in those days, although not for real ale!) were cut from lengths of 1mm diameter fibre optic – and I don't recommend it, since fibre optic doesn't like being cut; about 25% were lost as they pinged across the room, and the same proportion were too crooked to be usable. Not everything was perfect in the good old days – the famed draught beer was Whitbread Tankard, mainly, I think, because it travelled well rather than anything to do with the taste. The distinctive kegs came from the Preiser set. Modern FR beer is more drinkable but less macho in its service, and of course the glasses are plastic. Other interior details include brushes (John Piper), beer crates (Scale Link), and the clock (Springside, and not quite the right design). Still missing are the milk jug, the kettles, the container for ham salad rolls and the coat hooks for the crew.

It would have been a shame to have gone to all this trouble and then glued the roof on, so a rectangle of .040in Plastikard was cut as a false ceiling and glued inside the roof, which had been formed around a beer can filled with boiling water (at 140mm, the coach is longer than the average beer can, but fortunately there was a special offer on Younger's Tartan last summer, with 10% longer cans). The roof then just clips inside the vehicle.

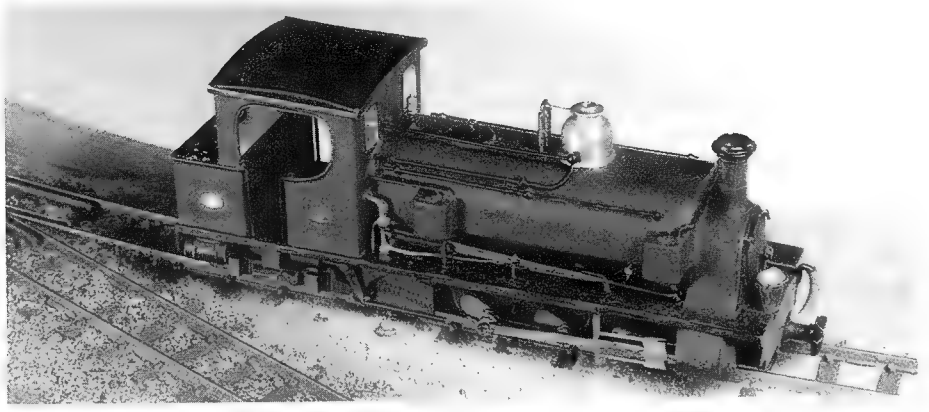
The notoriously uncleanable 'Venetian blinds', that we used to have to prop open by stuffing paper cups between the glass slats, were made the hard way – strips of .010in glazing, cut to length and fitted in place with a dab of Evostik on each end. Once I had got the things in, I firmed them up with a drop of Superglue. Door handles are Blacksmith turned brass, grab handles from the PC Coaches BR Mk I etch.

I'd like to say how privileged I feel to have been the first winner of the 009 Society's Tom Birtwhistle Trophy with this vehicle, which I entered in the modelling competition at the 1993 AGM. Perhaps in my case, the level of detail might be described as verging on the fanatical – but it required patience rather than skill, and it succeeded in its aim of bringing back memories from nearly a quarter of a century.

A version of this article first appeared in '009 News', journal of the 009 Society.

'BEDDGELERT'

FRANCIS SAMISH upgrades a 4mm kit of the North Wales Narrow Gauge Railway's famous 0–6–4ST:



Built for the North Wales Narrow Gauge Railway by Hunslet in 1878, *Beddgelert* was a rigid wheelbase, six-coupled 2ft gauge tank loco with a trailing four-wheel bogie. Whilst her owners doubtless thought this wheel arrangement suitable for working the steeply-graded Bryngwyn branch, the design does pose a number of problems to intending 4mm scale modellers 120-odd years on.

Yes, there is a kit available in the Chivers Finelines range, but, if built as supplied, will produce an inside-framed locomotive running on an adapted Minitrix 2-6-2 chassis. The latter also has the wrong coupled wheelbase, and an incorrect driving wheel diameter. Having previously scratchbuilt a couple of outside frame chassis using split-frame pick-up, I baulked at having to do the same for *Beddgelert*. After all, that's why it seems to take me around 18 months to build a 009 loco for myself - and *Beddgelert* was one of those insidious 'favours' we all seem to get railroaded into doing for friends from time to time. Expediency therefore dictated that if this job was ever to be done - or more accurately, ever finished - t'were best done quickly. As the outside frames would ultimately cover most of the drivetrain bogies, it seemed prudent to check early on whether the Minitrix chassis could be re-axled, retaining the proven gear-driven transmission, wheels and pick-up system.

Minitrix use a steel axle which is a shade over 2mm in diameter, with shouldered splined ends. Kittle Hobby (of Swansea) produce a 2mm brass bar section which, though slightly undersize, can easily be cut and squared-off to make up replacement extended axles. In retrospect, the more readily available 4mm standard 2mm steel coach and wagon axle would probably have done just as well. First step was to pull the Minitrix wheels off the axle and force off the gear-wheels. In order to make these a better fit on the new brass shafts, these were 'closed-up' by punching a pattern of pips around the bore edges. After a good clean with solvent, the gears were fixed onto the centre of the new brass axles with Loctite bearing retaining compound.

As for the wheels themselves, these were broached out to be a force fit onto the new extended axles. The outside cranks are, in fact, Saltford Models lost-wax brass castings drilled out to 2mm - a thankless job as they kept slipping out of the vice each time the drill started to bite. For the record, I have already earmarked Saltford Models to turn me up some discs with the right bore to start with, so that for the next project they can be filed to shape before the crank-pins are fitted.

Because of the slop in the Minitrix drivetrain, a great deal of play needs to be provided in the coupling rods. Surprisingly, it

proved possible to nip the crank-pin holes in the Minitrix rods to an oval - which, by stroke of good fortune, provided just the right clearance for the Saltford Models cast crankpins. Slices of appropriately-sized electrical wire insulation act as retaining collars and spacer washers. Quartering is now best described as 'approximate', but it all goes round without any binds!

The frames are really just 30-thou brass overlays, slotted over the axles and pierced for the prototypical access holes. They are soldered onto two stretchers - the front being Paxolin because of its proximity to the plastic keeper plate, and fixed to the chassis's erstwhile front pony pivot. The rear stretcher is brass, bolted onto the frame after cutting away most of the back chassis casting. The dummy outside frames could then be soldered up front and rear with alignment (more or less) being ensured by locating the sides over the extended axles whilst everything rested on a level surface. Connecting rods came from the remains of a much hacked about set of LNER tapered Walschaerts gear valve rods taken from the scrapbox. Crossheads were scratchbuilt around Mike Sharman brass crankpin top-hat bushes and bent nickel silver wire. *Beddgelert*'s cylinders proper now comprise a mix of Chivers whitemetal sides built up to full width with slivers of scrap whitemetal and a brass centre stretcher. How this lot managed to stay together whilst the low-melt was flowing thick and fast is still a mystery to this day!

Turning attention to the rear end, it seemed that something a little more elegant than the kit's own bar and bogie arrangement was called for. *Beddgelert* in model form is quite a tail-heavy loco, and in early track-tests displayed a tendency to lift her front wheels at the slightest provocation. Now, many small-scale loco building sages will tell you that a sprung bogie with only a transverse slot to guide it is a recipe for disaster. *Beddgelert*, however, has one - and after correcting the back-to-back measurements of one bogie wheel, it seems to work quite well. But don't jump to conclusions; after having tried three or four weights of coil spring, I am positive that this particular model locomotive must be the exception that proves the rule!

For those who wish to tear their own hair out in frustration in attempting a similar arrangement, the 'works' is built around a centre pivot running in a slot lined with NS 009 section Code 80 flat-bottom rail soldered into a hole in the footplate. The spring does not bear against the guides directly, but uses a washer to spread the load. The whole lot has a flat strip retaining bar atop the pillar, such that the bogie can be dropped clear of the footplate, whence it can be twisted 90 degrees for removal. Masochists should also note with glee that the bogie picks up on all four wheels, and is connected via a jumper lead to the insulated side of the current pick-up system. Oh, and the whole arrangement will go around 9in curves without shorting.

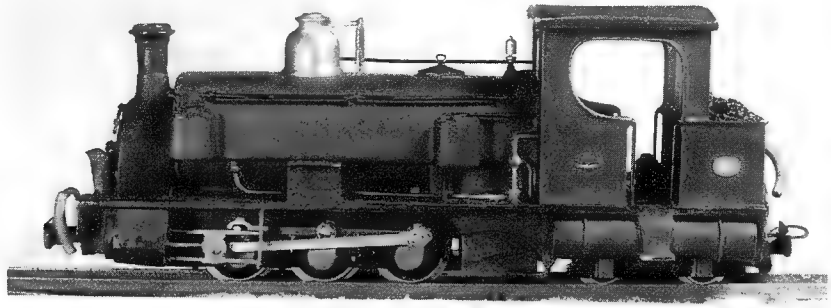
Running gear completed, some serious thought had to be given to the upperworks. To be awkward, the loco was to be modelled as it would have appeared in 1906 - which meant lower chimney (filched from a Chivers *Russell* kit, no less), Westinghouse braking system and hoses, and the later pattern of upright injectors. The saddle tank is unfortunately more of a square section than the rounded shape of the prototype's. To be fair, it is difficult to see how the standard Minitrix TV interference suppression moulding could have been retained otherwise. To make the best of a bad job, then, the tank was brutally rounded off with the help of a 16in coarse-cut file. If you need to remove large amounts of whitemetal like this, it's no use pussy-footing about . . . Similar drastic action had to be taken with the sections that made up the underneath of the boiler barrel. Here, more lumps had to be carved away to clear the motor and the front of the gear train, which projects above the footplate, just behind the smokebox. After this, things went relatively quickly. Cab and bunker sidesheets had their doors cut away before being mounted onto the footplate proper; only after they were soldered on did I fit separate handrails. All visible edges were feathered to look more like sheet metal, and the bunker was treated to a recessed section to allow the coal load to sit in it, not on it.

Details above the footplate took the form of a new smokebox door handle - made from soft copper wire around a brass peg - injectors from more wound brass wire soldered together, and reversing and drain cock operating levers. These are flattened brass wire, which I find an easier way of reproducing bar section than the alternative method of cutting off strips from flat sheet. Clack valves are handrail knobs, with the sandpipes from sandboxes being somewhat thicker copper wire. Though much of this plumbing was soldered in with low-melt, there were several instances where there was no alternative but to use Superglue to fix parts where access for the iron was just too difficult. Luckily for modellers, the prototype's air pump shared the cab with the crew, thus putting this particular piece of equipment safely out of view. Of the visible manifestations of the braking system, the small air tank on the right-hand side posed few problems; I used a brass turning with a notch cut out next to the frame where it cannot be seen that much. The massive left-hand tank I rashly decided to produce from a section of copper tube with soldered-on fixing bands and ends. Never again! Copper is an excellent conductor of heat, and it proved quite a struggle to get everything together long enough to stay that way! In fact, there is not much left of the tank's insides - most of it had to be cut away to clear the bogie anyway.

Other details included new firebox sides from brass shim, riveted using Dick Ganderton's excellent 'Graskop' tool. These were fixed to the superstructure-cum-rear-frame-extension rather than the Minitrix-based chassis. The dome is another turning - the second of two attempts on the trusty Unimat SL - and is secured by a screw passing up from underneath the saddle tank; the two Klotz safety vales and their single lever come away with it rather than being part of the main superstructure.

Painting is somewhat conjectural, as there is now no one alive who remembers what *Beddgelert* looked like even in her declining years. Photos of that era are no help either, as of course they are in black and white. So, after much deliberation, the majority opinion within our West Country group of 009 modellers came down in favour of MR crimson lake. This was brushed on over a spray coat of automotive cellulose grey primer. In hindsight, I should actually have used a spray can for the top coat too - or at least the closest colour Halfords had. MR lake may be a lovely shade when it is done properly, but it takes so long to build up a decent covering to get the necessary depth by brush that there is a danger that any fine detail - not that *Beddgelert* has it to excess - stands a good chance of being obscured. And when everything has a coat of matt varnish over the top to tone down the toy-train gloss, you can hardly tell it from BR maroon!

So, not the most finescale of scale models by a long shot, but at least she runs, and was completed in a reasonable period of time - if you can call about two months of evenings and weekends reasonable. Hoist by my own petard, it almost seems that a *Russell* employing similar techniques is now on the cards - but that, as they say, is another story!



LMS Wagon Miscellany

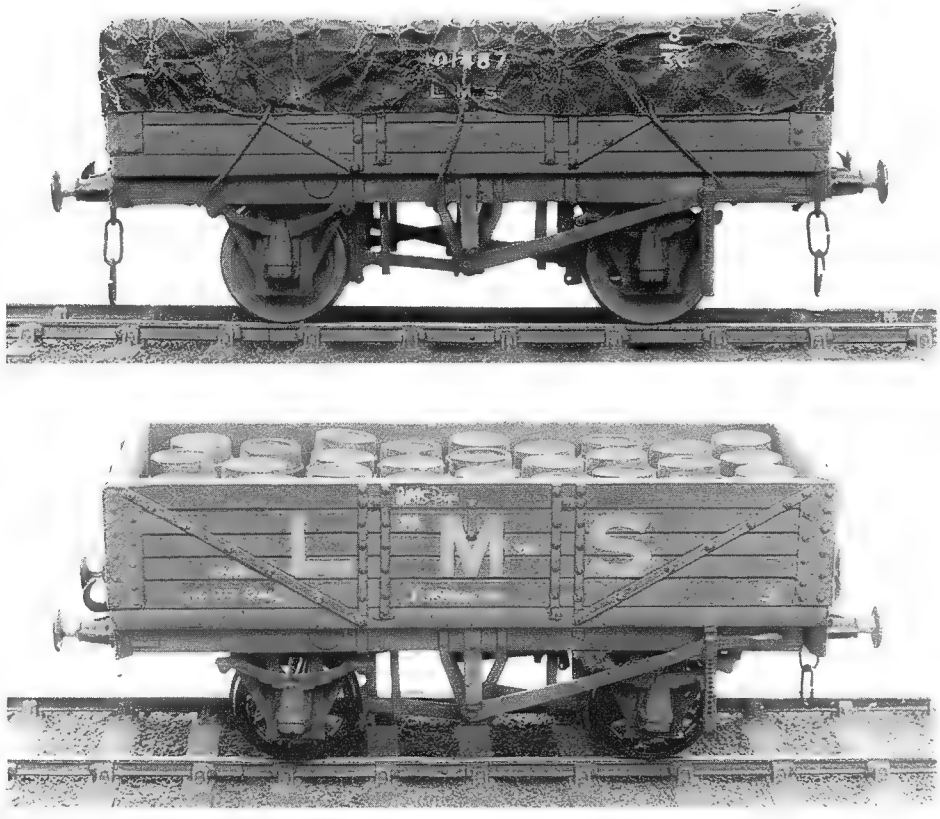
In his second article in this series, MARTIN GOODALL builds two of the numerous 5-plank standard opens of the LMS, plus a three-planker and its container:

LMS HIGH-SIDED GOODS WAGON (D1666)

The LMS built vast numbers of these standard 5-plank opens, with RCH fittings, between 1923 and 1930. Several manufacturers have produced kits of this prototype, of which the best is undoubtedly the whitemetal version from ABS (698). However, for my two models of this wagon type I used the 'basic' kit formerly produced by Ian Kirk (4M2), which I purchased for 30p each in 1975. As I have pointed out before, even the most unpromising kit can be turned into an acceptable model with a little effort.

For the price paid, I could afford to throw away half the kit and replace it with components which looked a bit more like the real thing. So, out went everything except the sides, ends and floor. The solebars were replaced with Plastikard. Each of these was made in two parts on either side of an outside V-hanger 'borrowed' from an RCH 4-shoe Morton brake set (ABS U08). This had its own section of solebar cast integrally (together with a projecting door-banger) so that when the parts were joined together it looked as though the solebar ran from end to end of the wagon, with the V-hanger projecting only slightly from the face of the solebar. A plain V-hanger was stuck on the inside of the solebar, and the brake shoe assembly was stuck inboard of this. The brake shoes were chamfered with a fine needle file in order to avoid fouling the treads of the wheels. Two-shoe long-lever brakes were fitted on both sides of the wagon, with no connection between the two sets of brake gear. Four-rib RCH buffers were fitted (ABS U03). The only other added detail consisted of a couple of strips of microstrip to represent strapping on the solebars, and a representation of the number plate from the same material.

One of the two wagons (158125) was given split-spoke wheels, and the other (24361) received a set of disc wheels. Both wagons have compensated suspension using my usual method of mounting the old Studiolith stamped tinplate W-iron units on pieces of rubber band – two pieces under one W-iron unit, and a single thin strip of rubber centrally placed under the other to act as a fulcrum or pivot. Use of Evo-stik impact adhesive gives the necessary flexibility to allow the compensation to work. The RCH spring/axlebox castings came from the EM Gauge Society. Alternatives are available, but if all else fails you can do what we all had to do originally – take an ABS casting complete with cast W-iron (ABS U02) and file away the W-iron, leaving just the spring and axlebox intact.



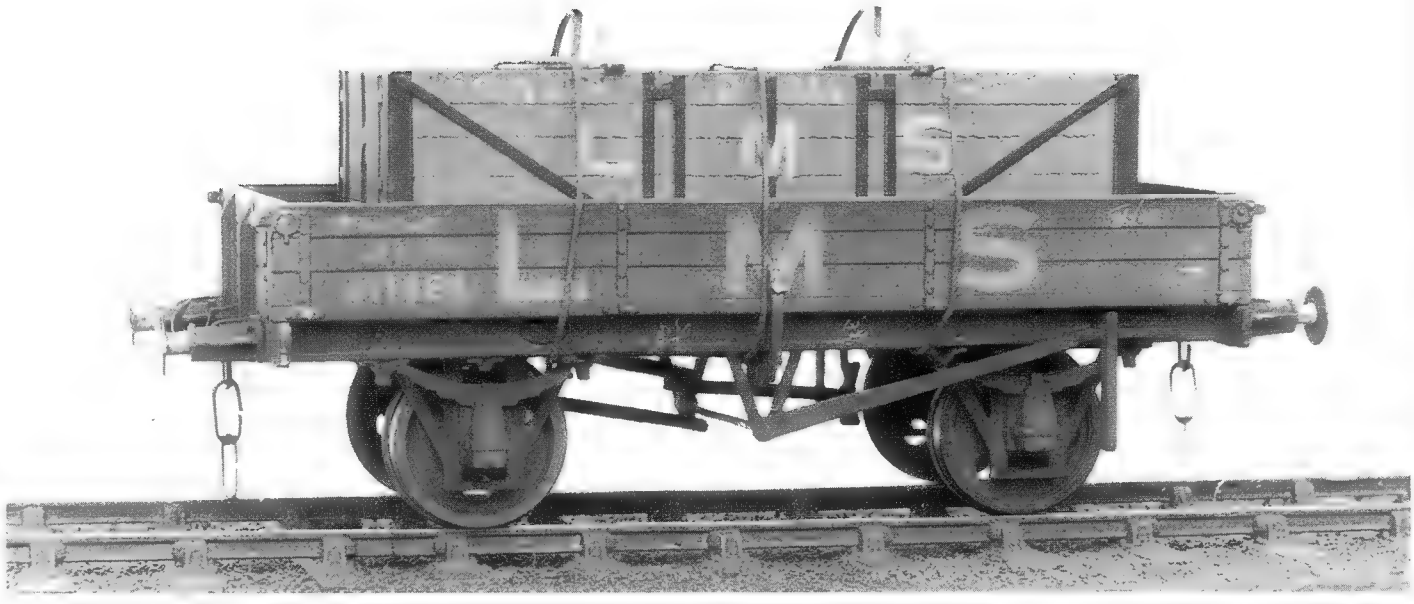
Two LMS high-sided goods wagons built from the Kirk kit.

There is one minor error in the kit which I did not bother to correct. The mitred corners of the ends of the vehicle are carried down to include the ends of the headstocks. This results in the ends of the headstocks being chamfered. A small piece of Plastikard filed to shape and stuck onto the chamfered end of the headstock would cure the fault, but laziness won out, and (as I never tire of saying) it is not noticeable from a normal viewing distance when the wagon is running on the layout. When painted, the models looked quite acceptable, although I confess that the end stanchions do have a distinctly anorexic profile.

These two wagons were batch-painted with the others in a single air-brushing session, using Precision Paints LMS Wagon Grey. Lettering was applied from the PC 'Methfix' sheet, which is infinitely better than any alternative, and much more reliable and easy to use than the 'Pressfix' version from the same stable. A coat of matt varnish was sprayed over the models to protect the transfers and, in common with other wagons in this lot, these two vehicles were subsequently sprayed with a heavy coat of weathering (using my favourite mixture of Humbrol dark earth and matt black).

When they built these wagons, the LMS had not heard of the concept of block numbering, so the numbers allocated were completely random, and possible running numbers can be deduced only from a study of published photos. A selection of numbers is listed on page 65 of Bob Essery's *Illustrated History of LMS Wagons* Vol. 1 (OPC 1981). These include 24361, 247185, 158124, 158125 and 96653, among others.

I rarely build two models of the same type of vehicle, and so in this case I wanted to give each of the finished wagons a distinctly different appearance.



LMS medium goods wagon with a type D open container.

One was loaded with empty barrels (Slaters 4A22 – three packets of 10), standing upright in the wagon. These were mounted on a sheet of lead, which provided the necessary weight to keep the wagon on the track and ensure that the compensation works. To allow for the thickness of the lead, a section was cut off the bottom of each barrel, so that they would stand at the right height inside the wagon.

The other vehicle was given a wagon sheet, which was deliberately dished in a manner which often occurred in practice, although it was something which should have been avoided because of the risk of water puddling in the middle, and penetrating to the goods through pinholes or tears in the canvas. This sheet is one of the excellent PC products (WS1), which in my opinion is by far the best representation of wagon sheets on the market. Sheet ties were represented with suitable lengths of cotton, and the sheet was weathered before being secured to the wagon.

LMS MEDIUM GOODS WAGON (D 1927)

The LMS started a major programme in 1935 to replace worn-out medium goods wagons from the pre-Grouping era. Over 10,000 wagons were constructed to D1927 between that year and 1949. Ratio produce an excellent kit of this prototype (573, formerly 5073), which formed the basis of this model.

My usual practice when constructing a wagon kit which is to be fitted with compensated suspension is to install the floor upside-down, so as to leave a clear area for the W-iron units. However, if the vehicle is an open wagon which is going to run empty, or where the full depth of the body is required in order to accommodate the load, it is easier to dispense with the kit floor altogether and to replace it with Plastikard sheet. Thinning of the rear of the solebars is usually necessary, although this was not so drastic on this model as it sometimes proves to be.

Once again, the faithful old Studiolith W-iron units were utilised, with the pivoted unit being secured to a fulcrum of plastic strip by track rivets melted into the plastic with a soldering iron. Rather than filing off the moulded W-irons, as I had done on one or two other Ratio kits, I removed the springs, axleboxes and axleguards altogether and substituted whitemetal spring/axlebox castings of the RCH type from the EM Gauge Society. On this wagon, I cut the springs at the compensated end, leaving the spring hangers attached to the solebar. This is in contrast to my more usual practice of mounting the whole casting on the W-iron, with the spring hangers clear of the solebar. Either method is, strictly speaking, unprototypical, but a gap has to be left somewhere to allow the compensation to work.

The two-shoe Morton brake gear is correctly represented in this kit. The brake lever with the reversing cam is on the same side as the brake shoes, so the brake push rods are mounted left over right. A suitable piece of wire was used to connect the brake levers across the wagon. Disc wheels were fitted to this wagon, and the model was completed by fitting cast buffers from ABS (U03), representing the 4-rib RCH type, in place of the moulded buffers supplied in the kit.

Both vacuum and hand-braked versions of this design were produced. The Ratio kit represents the latter. The LMS did use block numbering in this case but they seem to have got into a bit of a muddle as to which number series applied to the vacuum-braked wagons and which were allocated to the hand-braked ones. If you want a hand-braked wagon which would have appeared originally in grey livery, then it seems you must choose a number between 471100 and 471699.

The water-slide transfers supplied in the kit proved to be perfectly satisfactory. The trick in using water-slide transfers is to cut the decal film as close as possible to the edge of the letter or number. I cut the 'L' and the 'M' exactly to shape, and the 'S' was cut out leaving film only inside the curves of the letter. There is no need to use Solvaset or any similar preparation – when sprayed with matt varnish, this lettering and the numbers from the sheet (471424) showed no tell-tale signs of the decal film.

LMS TYPE D CONTAINER

The load for this wagon is a separate model in its own right, consisting of an open container (Type D), which I scratch-built from 30-thou Plastikard. The dimensions and other details were taken from

an article by Bob Essery in *Railway Modeller* for October 1964. For those without access to a drawing, the leading dimensions are: 54mm long by 25mm wide by 13.5mm high, with side doors 16mm wide and a door in one end which is 18mm wide. The sides and ends were assembled round the 52.5mm by 23.5mm floor, which was raised slightly inside the body. The sides and ends have five planks plus a 2mm curb rail at the bottom. Planking was scribed with a craft knife, which is an imperfect tool for this use; I had not yet discovered the much better scraper-board stylus when I built this model (about 15 years ago).

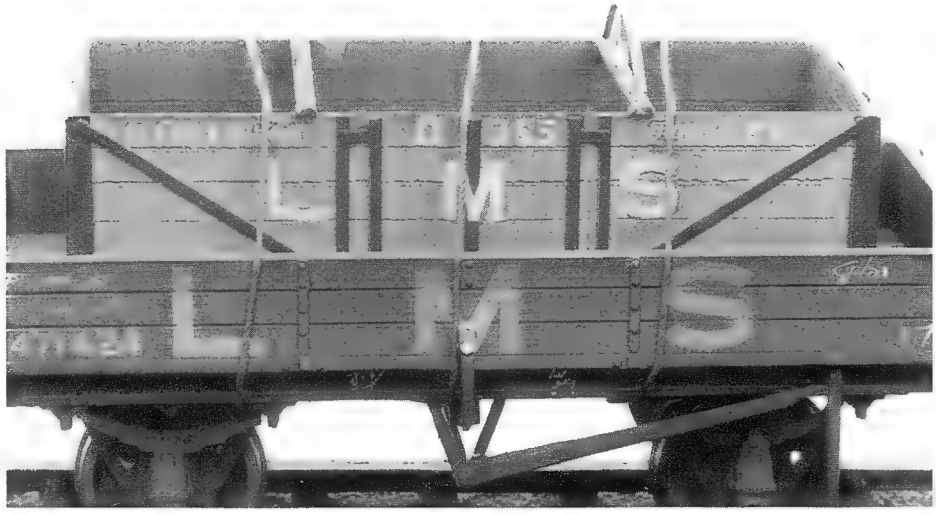
Strapping was represented by 10-thou Plastikard strip. I did not bother to add any bolt-head detail. Plastic Micro-rod was used to represent the door hinges.

The spreaders were also made of Plastikard, and even the hoops to support a wagon sheet were bent from Plastikard Microstrip. This last item was simply not up to the job; the strip fractured and had to be replaced by nickel-silver strip. Strip less than 1mm wide is not generally available, but I was lucky to obtain a supply of very narrow nickel-silver strip from Ken Cottle of the ScaleSeven Group. The replacement was fixed with cyano-acrylate adhesive.

The prototype container was supported on under-floor chocks. I omitted these and mounted the container instead on a piece of lead sheet, which served the dual purpose of raising the container slightly off the floor of the wagon and providing extra weight. Another piece of lead was fixed under the wagon. Containers were not just left to slide around the floor of the wagon – they were firmly secured in place. On this model, because the wagon was not specifically designed for the carriage of containers, the container was roped down.

Official photos show that container No. D355 had its strapping picked out in black. I suspect that this may have been a one-off, purely for publicity purposes; other containers appear to have been painted dark grey ('smudge'). Nevertheless, as I was modelling this particular container, the model was duly painted light grey with the black strapping. Lettering came from a PC Pressfix transfer sheet and, as noted before, I had some difficulty in getting these transfers to lie flat on the surface of the model. Methfix transfers from the same manufacturer are much to be preferred.

The number, D355, was carried in the middle of the top plank on each side and end. Also on the top plank of each side were the load and tare, written in italics, thus: *To carry 4 Tons* and *Tare 15-2-0* (i.e. 15 cwt, not 15 tons!). I took the tare weight from container No. D27. It seems a bit on the low side. These containers generally had a tare weight between 19 cwt and 1 ton 3 cwt. Both wagon and container were fairly heavily weathered, and some wisps of straw (plumber's hemp) were strewn around on the floor of the container. This is strictly against the rules, as wagons and containers were supposed to be thoroughly swept out after unloading, so as to obviate the risk of packing or other waste subsequently being ignited by a spark from the engine.



Close-up of Type D open container No. D355 in grey and black livery.

Misc.

A BITTER BLOW

Anyone who hoped that 1995 might see the image of transport enthusiasts heading for an improvement will have had their hopes dashed by the TV commercials for Tetley's canned bitter which was launched just before Christmas. Supposedly set in the 19th century, these suggested that the invention of the railway was immediately met by the emergence of the first train-spotters. And there they were, standing by the trackside – three period-costumed mega-nerds hoping to catch sight of locomotive No. 1. Not helpful, perhaps . . . but quite funny.

Slightly more esoteric but just as interesting in its own way was a page in *Professional Engineering* culled for us by Mike Larcombe. This asked various industrial top knobs what they would buy a child for Christmas to encourage an interest in engineering. Most, sensibly and predictably, went for Meccano sets, but one said this: "I'd give a train set, but it wouldn't be an ordinary one. I would include a scenic layout and rolling stock, a locomotive kit to construct and, most importantly, the electric motor to drive it and the transformer to power it." That came from John Collier, chief executive of Nuclear Electric, who also added: "If Brunel were alive today, I'm convinced he would be electrifying Britain's railways and cleaning up our countryside by minimising fossil fuel burn." Yeah, and he'd probably glow in the dark and give himself six-figure pay rises.

HORNBY RESTORATION

The Ancient Chapel of Maghull, Merseyside – last resting place of Frank Hornby and his family – is trying to raise thousands of pounds to restore the church, graveyard and ornate Italian marble Hornby memorial. Hornby lived in Maghull for many years, including the period in which he was a toy and model magnate. Any contributions, no matter how small, can be sent to the Ancient Maghull Chapel Trust, St. Andrew's Church Rectory, 20 Damfield Lane, Maghull, Merseyside, L31 6DD. Cheques should be made payable to the Trust.

EAST SUFFOLK LIGHT

The editor's old 'East Suffolk Light Railway' layout is on the market again, after a good few years in storage. It was originally bought by Dr. Paul Holmes, who had plans to display it in a model railway exhibition centre. For a variety of reasons, this cannot now go ahead and the dear old ESLR – a fully scenic, end-to-end P4 model around 21ft long – is for disposal. Anyone interested can contact him at Burnside Farm, Two Laws, Oldfield, Keighley, West Yorkshire, BD22 0JN (01535 645674).

SEEING THE WOOD . . .

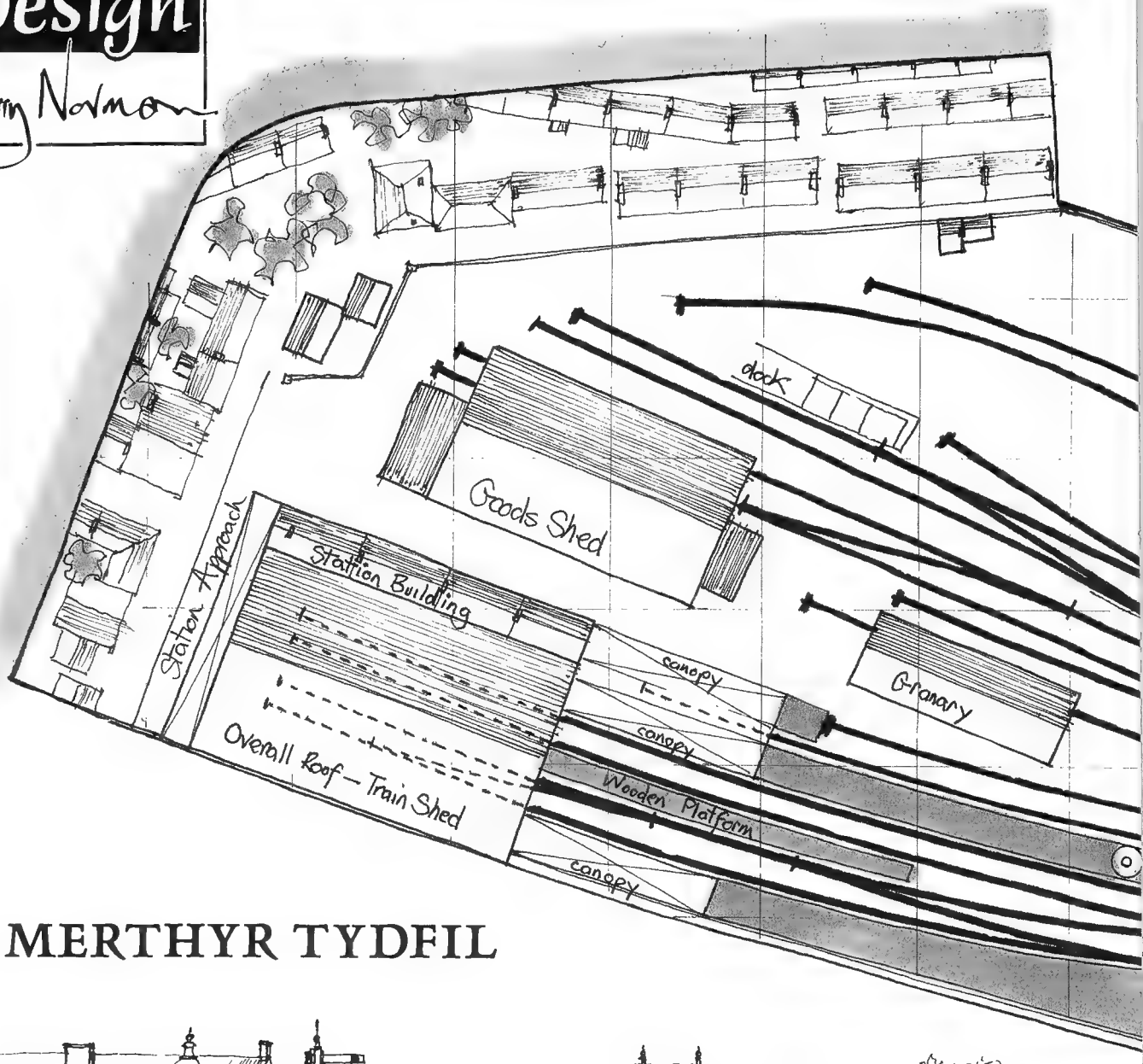
We're grateful to Doug Ware of Leyton, London, for sending us details from a recent issue of the magazine *Current Archaeology* concerning the uncovering of what is thought to be the world's oldest railway. The 40 metre length of timber-railed wagonway, complete with a crude but genuine turnout, is believed to have been laid (ironically) at Bersham Ironworks, near Wrexham, Clwyd, soon after 1753. The section that survives is around 3ft gauge and remarkably well preserved. Scope here, perhaps, for a layout by someone who doesn't enjoy soldering . . .

SOCIETY NOTES

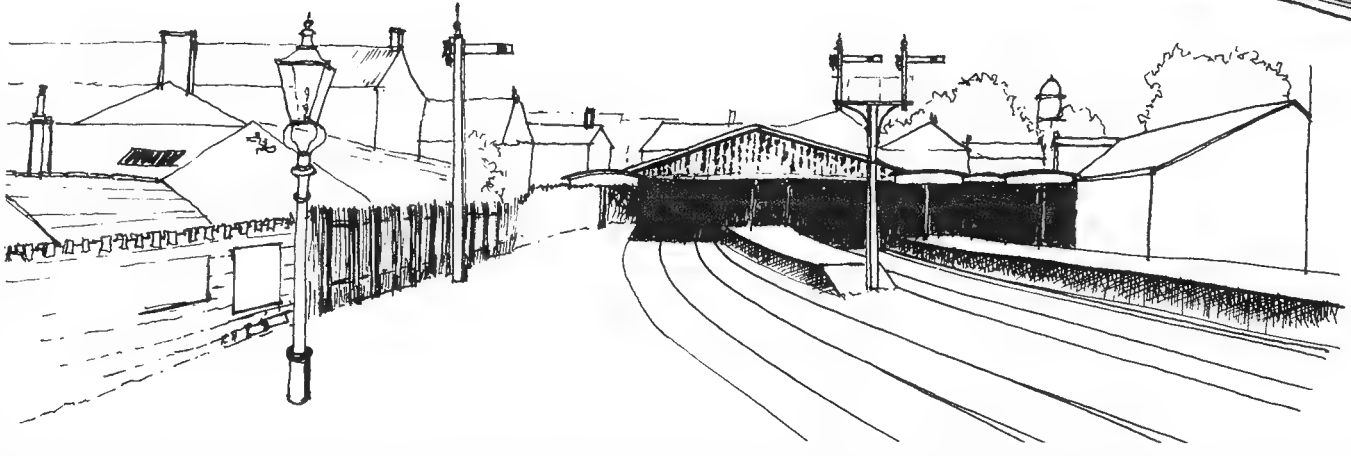
Carshalton & Sutton MRC is staging a new, large quality show at Epsom Racecourse's Grandstand Exhibition Hall in March next year and are already pulling together a host of top-notch layouts and traders – so it's worth looking out for. Anyone interested in joining this famous old club can contact the secretary David Smith at 35 Oak Close, Copthorne, Crawley, RH10 3QT.

Layout Design

Barry Norman



MERTHYR TYDFIL



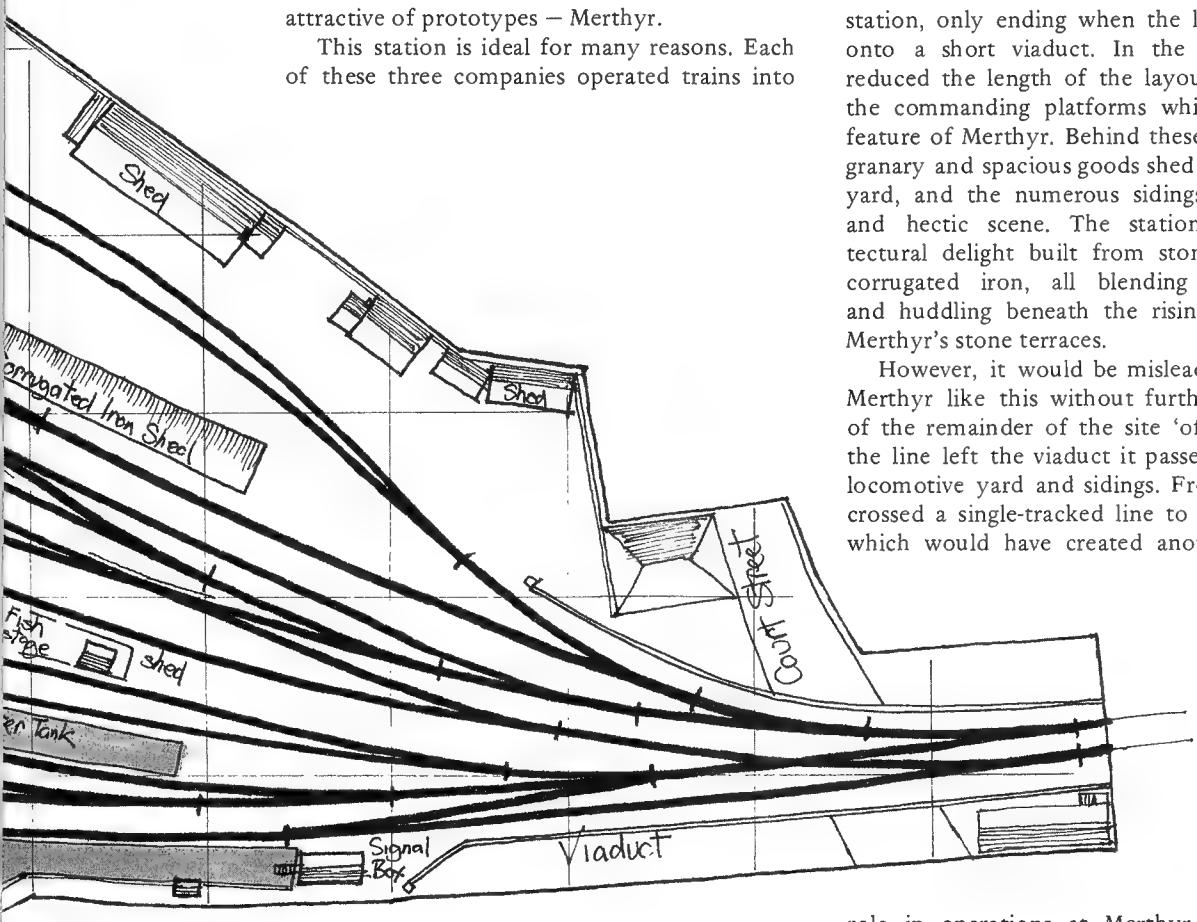
Although the Brecon & Merthyr, Rhymney Railway, and Taff Vale, were amongst the most characterful and enchanting railways in this country, they are surprisingly rarely modelled. Between them they owned a varied collection of unusual and most attractive tank engines built, by and large, in the workshops of our smaller and more individual locomotive builders like Sharp Stewart, Vulcan and Robert Stephenson. In my view, the railways of Wales make inspiring and fascinating topics for models and I have chosen one of the most attractive of prototypes – Merthyr.

This station is ideal for many reasons. Each of these three companies operated trains into the station, which became part of the GWR upon its purchase of the Vale of Neath Railway. With such a collection of very different railways all meeting in one place, the pre-grouping period must have provided a colourful spectacle here. The colours of the three companies were also joined by those of the Cambrian Railways and, from Abergavenny, the LNWR's plum black.

The station was compact, yet extensive. Five platforms met under the Brunelian overall timber roof and ran the full length of the station, only ending when the lines converged onto a short viaduct. In the model I have reduced the length of the layout yet retained the commanding platforms which are such a feature of Merthyr. Behind these a three-storey granary and spacious goods shed dominated the yard, and the numerous sidings wove a busy and hectic scene. The station is an architectural delight built from stone, timber and corrugated iron, all blending together well and huddling beneath the rising backdrop of Merthyr's stone terraces.

However, it would be misleading to present Merthyr like this without further explanation of the remainder of the site 'off stage'. When the line left the viaduct it passed a substantial locomotive yard and sidings. From here a gate crossed a single-tracked line to Dowlais works which would have created another important role in operations at Merthyr. Likewise the main running tracks diverged and took routes to Brecon (B&M and LNWR Joint), Neath (GWR) and Cardiff (Taff Vale). As already mentioned, this diversity of routes was the very essence of the station's operational variety and character.

I hope this glimpse of Merthyr will encourage a few more people to look towards the railways of South Wales for inspiration.



KIWI CONTROL

CHRIS LANGDON reviews a feedback controller from a range developed and produced in New Zealand.

New Zealand does not spring immediately to mind when discussing advanced model railway electronics or controllers, so I was very surprised to receive for review a modern feedback hand-held controller from the Antipodes. John Brouwer of Christchurch, New Zealand, has been building controllers for the last 10 years, and the feedback type he has designed, discussed here, has been available there for three years.

One might compare the Fidelity with the Pentroller that I previously reviewed for MRJ in as much as both claim to do the same thing – that is, work well with Portescap motors as well as the more conventional iron-cored types. I am still a great fan and user of Portescap motors, even if they seem to have lost favour over the last few years for some reason. The Fidelity does not use the switchmode circuits used in the Pentroller hand-held controller, and is consequently larger, but the maker claims it makes less noise and gives improved starting. They also state that the controller can get warm under continuous use, but is current-limited to reduce power dissipation on short circuit.

The instructions with the Fidelity are excellent in content. I was very impressed by the amount of space devoted to exactly what the controller is doing, and the differences between it and other feedback controllers. This is good, because from correspondence in the model press and conversations at exhibitions, it is clear that many modellers have difficulty in selecting the right sort of controller. Some modellers still spend considerable time building perfect locomotives, fit them with can or coreless motors and then try to run them with the trusty old H & M – and wonder why the locomotives run poorly.

Electric motors, by their action, also act as generators and can therefore supply electrical current as well as receive it. This energy supplied by the motor is called 'back-EMF' (Electro Motive Force). The back-EMF developed depends entirely on the speed of rotation of the motor, so by monitoring back-EMF it is possible to get a very accurate measure of the motor (and locomotive) speed. Back-EMF is measured (in volts) by sampling, which is done by interrupting the delivery of current at regular, very short intervals (of 1/100th of a second). By comparing this back-EMF voltage sample with a desired voltage level, adjustment to the output can be made electronically to keep the speed constant. This means that the speed does not vary uphill or down, or through turnouts and round curves where the train resistance varies. However, its main virtue lies in enabling exceptionally slow and controlled speed to be attained and maintained, with really smooth starts. There are limits to this, of course, and the ability to run really slowly and smoothly is also very dependent upon the quality of the current collecting system and type of motor.

Most back-EMF-measuring controllers (usually called 'feedback' or closed-loop controllers) have used pulse width modulation (PWM) of one form or another to control the average output voltage by supplying variable width pulses at a relatively high peak value compared with the average value. This gives very good low speed control, but causes motor noise and overheating. Moreover, there will be times when there is no output from the PWM controller for a comparatively long period, and there can be problems when the train lighting, for example, powered from the controller, acts like a resistance brake, causing the motor to slow down between pulses. Coreless motors, with very little inertia, definitely do not like PWM motors, and some motors slow down between pulses, causing rough and noisy running with peak currents which are too high; this can cause damage to delicate brushes.

Our Fidelity Speed Monitor has, however, been designed to vary the output voltage level and the waveform has been developed to produce the best results from the traditional ironcore motors as well as from coreless motors. Remember, however, that when train lighting and motor current are both from the controller, total current capability must be kept in mind (as with any controller). Train lighting is best supplied from a separate high frequency AC power supply (also available from Fidelity), so the controller only supplies the locomotive.

The control system used in the Fidelity Speed Monitor claims not to generate noise or heat compared with rectified AC controllers, and is claimed to be ideal for can motors, small 2mm/N gauge mechanisms (which I was not able to verify), and coreless motors such as Portescap, as well as conventional open-frame motors.

Installation was straightforward, although I was a bit surprised to find black and red wires used for AC inputs. The instructions are clear, and the panel well laid out. As in previous reviews, I tested a variety of locomotives fitted with Portescaps, can motors, and the more conventional motors fitted to Mainline and Bachmann locos. Most of my testing was with a newly built DJH 'West Country', which is compensated and fitted with a Portescap motor. This locomotive responded very well to the controller, especially at slow speeds. There comes a point with slow running when the limiting factor is cleanliness (or lack of) of track and wheels – and no controller, however good, will cope with these conditions. However, I was impressed with the control of the locomotive at slow speeds. The two levels of inertia worked well, but I had to bring the locomotive to a screeching halt by full application of the brake several times. You can alter the slow-down/speed-up characteristics if required.

A selection of large and small locos fitted with can and open-frame motors were tested, and all worked well; again the slow speed handling was very good. A large diesel that I use for track cleaning, fitted with a large can motor, was a bit noisy at slow speed, but this was not too noticeable.

This is a very good controller, well designed for a complicated job of controlling different motors, and can be recommended to anyone with locomotives fitted with Portescap-type motors.

This controller costs £44 airmail postpaid from John Brouwer, 31a Naseby Street, Christchurch 1, New Zealand. Payment can be made by personal sterling cheque, bank draft or Visa card, and delivery from date of ordering is 2-3 weeks.

PUFFED GRASS

MARTYN WELCH gets good results from nylon 'grass' fibres which are sometimes dismissed as garish train-set material:

Whilst exhibiting 'Hursley' at the MRJ Exhibition in London's Central Hall, one of the questions most frequently asked concerned my methods of reproducing grass, to the point where I got quite hoarse with the continuous explanations. Not that I minded in the least, because those few days were probably the most enjoyable of my modelling career to date (I still can't believe it was getting on for five years ago).

Occasionally, the subject of grass is raised again because until recently, I had some small display pieces in my shop which were similarly grassed; there was also a layout featured in one of the modelling magazines whose builder had employed this system after I'd explained it to him. He kindly mentioned me in his article, with the result that I have received several letters and telephone calls asking me to pass on the techniques. I have enjoyed writing replies to these scribes, but thought it might be less time-consuming and perhaps more useful if I wrote a short piece detailing the system along with some photos to assist.

I cannot lay any claim to the originality of the process because, coincidentally, it was demonstrated to me at the annual Model Railway Club exhibition held at the very same Central Hall in about 1972. I was wandering around when I became drawn, along with several other red-blooded males, to a stunning brunette with a German accent who, in rather broken English, valiantly attempted to explain the exciting process of creating grass. One got the impression she had been given this task at the last minute and was obviously feeling somewhat out of place amongst the milling throng of anorak-clad and holdall-toting enthusiasts, but she was doing her best and we all looked on with suitably beaming grins. I was probably one of the few who paid any attention to what she was actually saying, judging by the nudges and muffled giggling which seemed to pervade the crowd, but I came away from the show with several bags of Noch nylon fibres plus a soft plastic puffer bottle. Mind you, with legs that went on for ever, even if she'd been selling pairs of left-footed wellies, she would doubtless have sold out within 20 minutes . . .

At that time, only Noch was promoting this grass system (as far as I am aware) and their nylon 'grass' fibres came in small packs of assorted, rather garish shades similar in colour to the grass mats sold in most model shops today. Nowadays, Heki seems to dominate the field (literally) and markets the fibres in larger 100g bags while Noch still manufactures the plastic bottles and probably the small bags of fibres.

So, how does it work? Well, it's incredibly simple – all you do is mix a blend of the nylon fibres in a suitable container (like an old ice cream tub) until you obtain the shade of grass you like. I usually use Heki No. 3361 'Waldboden' which translates as 'forest floor', mixed with Heki No. 3363 – 'Winterboden', which is self-explanatory. This latter colour is a beige, bleached-grass colour and changes the shade of the other grass from bright green to a softer, late August shade. The fibres are decanted into the plastic bottle which is labelled 'Streugras' (followed by the description: 'Spritzdose fur naturgetreu stehenden Graswuchs auf Modell-Anlagen' – which any connoisseur of the language will immediately recognise as 'Don't pull the chain whilst the train is standing at the station'). The bottle has a perforated lid consisting of five 4mm diameter holes and, tipping the bottle

This view taken across Hursley's tracks shows the extensive use of the puffed-on grass fibres representing short to medium length growth. The longer bleached grasses will be dealt with in the next issue.
BARRY NORMAN

upside-down, one vigorously squeezes the bottle, puffing the fibres through the lid onto a pre-glued surface. This action statically charges the nylon fibres so that they stand on end when they strike the glue.

One important point is that the glue must be tacky to the touch, otherwise the fibres will just keel over and lay down like grass clippings. I use PVA white glue for small areas such as between sleepers or around the base line of a building, but one of the problems with PVA is that it may be too fluid when first poured from its container and will initially have little grab, but left too long, it starts to harden, forming a rubbery skin, by which time it is too late for the fibres to adhere. Experiment on a scrap of paper so that you can judge how long it takes to become tacky, or simply keep prodding the glue with a finger until it feels sticky to the touch, at which time it is safe to puff on the fibres.

For larger coverage, I suggest using carpet underlay spray adhesive such as Stikatak which is instantly tacky but still dries hard eventually. An expensive alternative is Scotch Displaymount, which, although also being instantly tacky, remains so without ever drying, which can be a nuisance if you accidentally

Above: *Heki packets of fibres and the Noch soft plastic bottle with its perforated lid.*

Right: *Vigorous puffing of the fibres onto the 4mm siding and embankment.*

press down or lean on the grassed areas. The 'grass' won't stand up again after that, becoming squished into the glue. For more accurate spraying of the adhesive onto selected areas, spray the glue through some ragged holes cut in a piece of newspaper so that the spray strikes the parts you want to grass but the edges of the paper's holes mask the areas to be kept adhesive free.

For those of you who can remember that far back, there were a number of Leyland Minis trundling about in the early seventies which had a customised exterior fur finish (usually in purple) which I understand was created using a more sophisticated system but following the same principles of electrostatic coating. I saw one in Bournemouth and everyone who spotted it parked in a side road, approached it rather sheepishly, cast a somewhat furtive glance over a shoulder and then hesitantly stroked a furry purple wing before scurrying away again. I'm not quite sure how you were supposed to wash the car, perhaps you waited until it moulted in the hot weather . . .

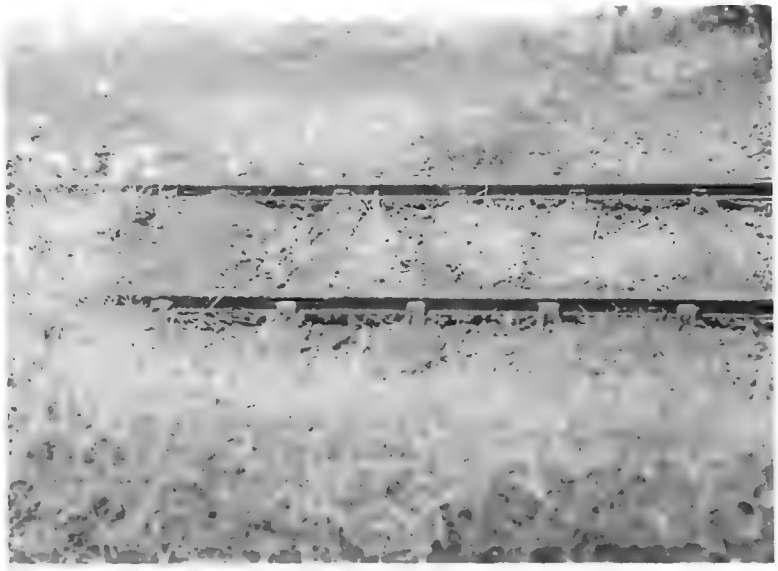
Once you have puffed the fibres over the desired area, you must wait until the glue has fully hardened before either tipping the model upside-down over a large sheet of newspaper or, if that's impractical, vacuuming off the surplus fibres with a handkerchief or piece of gauze placed over the Hoover nozzle so that you can save these surplus fibres for further use. This action also encourages the fibres to lean in the same general direction if you're careful.

For tinier grass deposits, a cocktail stick dunked in the PVA is an ideal way to transfer small blobs of glue to awkward areas. The fibres attach themselves to the entire surface area of the blob of glue, creating a realistic small tuft or clump with the blades radiating outwards from the domed surface.

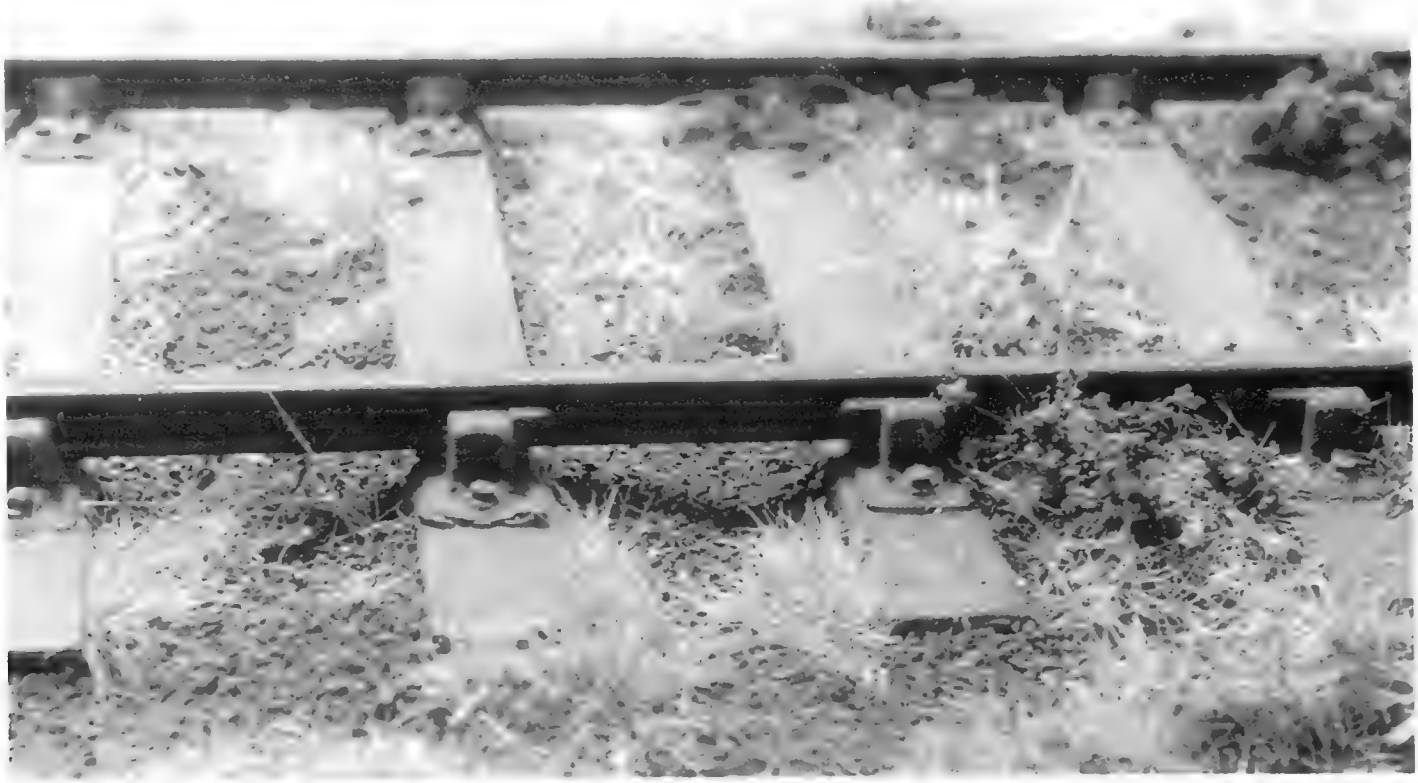
To represent seams or cracks in either concrete or tarmac, simply apply a thin coating of PVA to a short length of wire and just carefully touch the wire to your

platform or road surface at the desired places, forming very thin straight lines of glue. Puff the fibres all over the glued areas and allow time for the adhesive to harden (but not completely) before hoovering off. Because the blades of grass are all standing upright, it is now possible to sprinkle very fine scenic powders of suitable mossy colours over the area whilst the glue is still setting and the powders will fall between the blades onto

Section of 7mm station platform with simulated cracks in the tarmac, created as described in the text.



Left: *Medium grasses surrounding the base of a 4mm scale Coopercraft hut, painted and weathered.* Right: *The sleepers of this 4mm scale section of track are almost totally engulfed with tufts of grass.*



The identical process in 7mm scale provides smaller clumps or tufts between the sleepers.

the glue, which will give the impression of more greenery beneath the grass.

The fibres, being made of nylon, have a tendency to reflect the light when viewed from certain angles which, whilst natural grass actually does radiate a slight sheen, sometimes doesn't quite look right on the model. If this really bothers you, either be very careful when arranging your layout's lighting, or you could tone down the reflections by airbrushing fine coatings of enamel paint of appropriate greens and beiges to reduce the glare. Beware of densely spraying everything in one single colour, since Mother Nature isn't usually that boring, but rather creates an incredible array of hues if you take the trouble to look. Alternatively, matt varnish sprayed over the grassed areas might rectify the problem.

Another option is to gently drybrush the blades with a medium flattie brush containing the barest quantity of pale cream/green colours. Please be certain the glue has completely hardened before attempting this, otherwise your brush will finish up clogged with the fibres which haven't become fully secured. This dry brushing will not only reduce the shiny nylon appearance of the grass, but also effectively bring the individual blades to life. I know this sounds a little over the top, but you will be pleasantly surprised at the difference this process makes to the overall appearance of your grasswork. I certainly favour the latter routine – particularly if I wish to draw attention to a particular section of track or a clump of grass at the base of a telegraph pole etc., although it would obviously be impractical to treat the entire layout this way unless you really want to become a gibbering idiot. Alas, it's already too late for me . . .

What will surprise you is the speed with which you can grass the most detailed of areas on your layout. For example, the weed-encrusted sidings seen in most of my pictures each took about 15 minutes to foliate with grass and small

Top: *A closer view of the medium length grass disguising the baseline of the 4mm Coopercraft lineside hut.* Above: *A bird's eye view of the shorter growth on the 7mm siding.*

Right: *Farm track across Hursley's skew arch bridge, showing the grass fibres to good effect.*
BARRY NORMAN

undergrowth. Naturally, the time spent titivating and drybrushing takes that much longer, but that's finally down to you to decide how much effort you're prepared to put into your model.

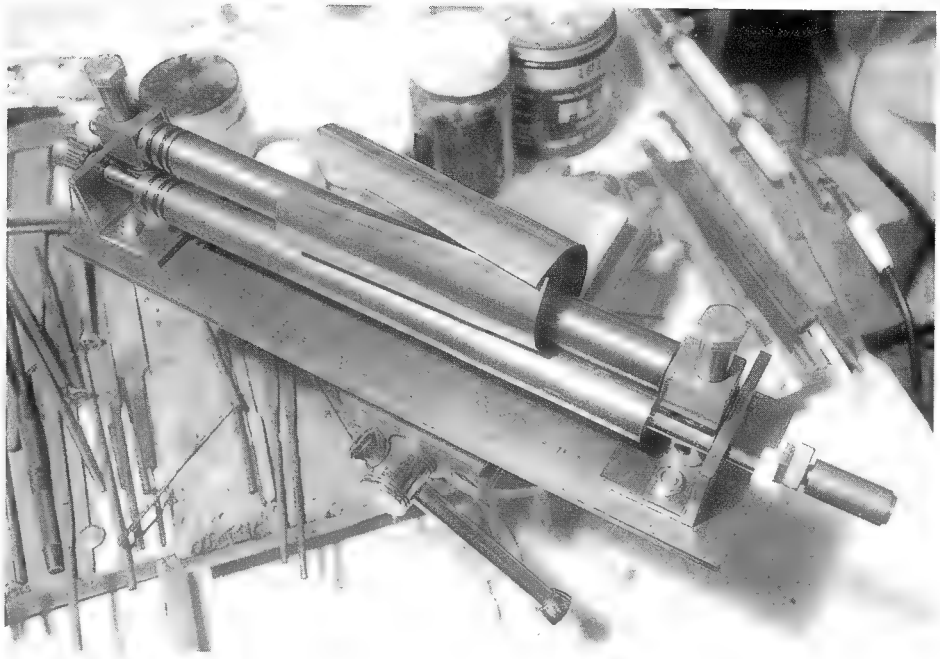
The Noch puffer bottles are available from W & H (Code 08100) and the Heki fibres should be in your local model shop if you have one, or can be bought directly from Blackwells of Hawkwell who are the main importers.

I believe these nylon fibres can represent realistic medium to longish grass rather convincingly in 4mm and shorter growth in 7mm and am surprised, given the number of years they have been on the market, how few modellers seem to have utilised the system for their own layouts. Either there aren't many shops stocking the products, or perhaps there are hundreds of models out there which *do* use this system but they have yet to be publicised, in which case I may be preaching to the converted. It is certainly a relatively simple alternative to the almost obligatory ground foam or dyed sawdust which bears little or no resemblance to blades of grass and vice-versa.

However, to portray the longer, wheat-type grasses and other delicate plant growth (particularly in the larger of the two scales), some more complicated procedures will be required if you wish to further enhance your embankments or bordering pastures. So, in the next issue, I shall discuss the materials I stumbled upon when constructing 'Hursley' and those discovered since, along with their practical application.

Rolling Mill

PHILIP HALL and COLIN GIBBARD review another top-quality tool from GW Models:

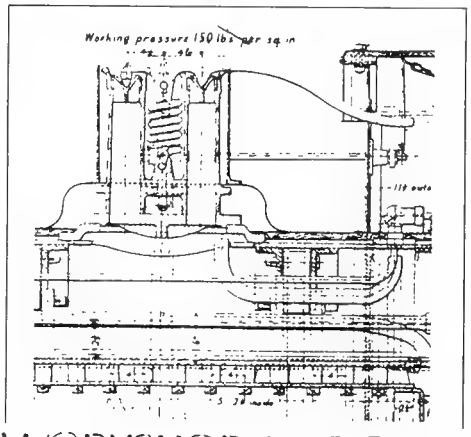


George Watts of GW Models has steadily been gaining a reputation as a producer of well-made tools for the modeller, and his latest offering is this miniature rolling mill. There are, of course, similar tools on the market, but this one is particularly interesting because of its compact nature. We have had two of these little machines in our respective workshops for a while now, and offer these notes based on our experiences so far.

The tool consists of three ½in diameter rollers, 6in long, interconnected by gears, mounted on a sturdy baseplate 8¼in x 2in which in turn is bolted to a piece of 1in angle to provide for vice mounting. A small handle turns the rollers, the top one of which is removable to allow for the release of a finished tube. Apart from the gears, which are brass, the tool is made from mild steel throughout and is robustly and competently made.

In use, the metal to be formed is simply inserted between the top and bottom rollers, after ensuring that the top roller is parallel to the others by adjusting the hexagon screws at each end. These screws are then tightened down to form the initial curve, and then progressively tightened further, rolling the material back and forth until the required diameter is achieved. Turning the screws with the fingers is easy enough, although a small spanner can sometimes be useful. You will probably have to ease the metal through the rollers as you turn them, particularly as the radius decreases and the pressure of the top roller on the bottom two increases. Scratchbuilders will obviously need to have worked out the shape and size of their component beforehand. Taper boilers are best produced by rolling a parallel tube and then turning the screw at one end only, again rolling gently back and forth until you have the correct taper. Getting it right will often mean a bit of fingertip persuasion as you roll. Practice, as always, makes perfect, but once you've got the hang of it, boilers, cab roofs and generally anything with curves in them lose their sting instantly!

A problem often encountered when building a locomotive superstructure is properly forming the last few millimetres at the edge of a cab roof so that it fits



WORKSHOP MATTERS

nicely, or ensuring that the two edges of the bottom seam of a boiler meet tidily so they can be soldered together. Here the rolling mill is useful as a curve may easily be formed right up to the edge of the metal. Reducing the radius will help to counteract the natural tendency of the metal to spring back, and anyway it is simple to ease the curve out with the fingers. Roll it a trifle tight and ease it out later is not a bad rule of thumb here.

One obvious use is the rolling of etched boilers, smokeboxes and the like, and here the tool copes well, but care is needed with etched and impressed rivet detail, for the rollers will naturally tend to flatten this as the metal is passed through. The solution here is to protect the detail with thin card or thick paper (cartridge paper is ideal). Likewise, etched boiler bands present a problem, for it will be realised that you are actually rolling the bands, not the boiler material in between, and distortions could occur (as 'humps' between the bands). In practice, the metal is so thin where it has been half-etched away (typically 5 or 6-thou) that it is persuaded to follow the curve quite readily. Certainly we have had no trouble with boilers down to the minimum the tool can produce – 14-15mm, although there is some distortion (humps!) at each end, i.e. the bottom seam of the boiler. Since this can hardly be seen when the model is complete, perfection is not essential and some devious work with flat-nosed pliers will produce acceptable results. Take it slowly and steadily when rolling and all should be well anyway.

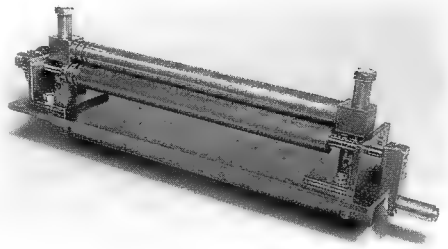
Of course, the tool will cope with thicker material than 10 to 12-thou, and the manufacturer's suggested maximum is 20-thou. Our feeling is that in 4mm scale, where most use for the mill will be found, thin metal is entirely adequate and there is no need to use anything more substantial.

There are two grooves at one end of each roller intended for bending rail. This is of limited use, in finescale at least, for rail can easily be bent by hand, but we understand that this feature has gone down well with 7mm workers where rail section is quite a bit beefier. It could also be used for curving small square and rectangular sections, but these can equally be passed through the rollers proper.

The only drawbacks we have found are that occasionally the top roller sticks when rolling, but this seems to be more a

result of the way the metal is drawn through rather than any inherent design fault. It is easily cured by moving the roller along a little. The screw securing the handle to the spindle also tends to lose its grip, but a drop of Loctite seems to solve that one.

In short, then, a very useful addition to the workbench for 4mm scale and small 7mm scale models. Naturally it cannot cope with a 60ft long coach roof, and something bigger and longer would obviously be better suited to the larger scales, but for the purposes for which the machine was designed it works very well indeed. Whether you actually *need* a rolling mill is very much up to the individual, for you may feel that you have to be forming a lot of curves to justify the expense, but this tool has to be regarded a bit like resistance soldering – you can manage without it but the occasional job comes along where it makes life so much easier. We wouldn't be without ours now, and warmly recommend it.



Prices and availability of this tool are shown in GW's advertisement.

Model Railway Club EASTER SHOW 1995

New Horticultural Hall, Westminster, London SW1.
Saturday 15th April to Wednesday 19th April
10.30 a.m. – 6.00 p.m. (8.00 p.m. on Tuesday)
£6 adults, £3 child/OAP, £16 family (£5/£2.50/£14 in advance from Hobby Publicity, 4 Calshot House, London N1 9DA – enclose an SAE)

The Model Railway Club's annual Easter exhibition (the IMREX short form is not used in the latest publicity) will take place for the 70th time this year. While obviously a landmark for the MRC and the hobby, the 1995 show is down to only one of the Horticultural Halls. With better use of space, the organisers say that all the most popular features of the exhibition are being retained. The following layouts are booked to appear, with trade and society support:

NEW ANNINGTON – 4mm/OO: 26ft 6in x 15ft, the MRC's continuous modern layout based on West Coast Main Line practice.
STRONE FERRY – 4mm/OO: 12ft x 10ft, David Smart's Scotrail terminus with diesel traction *Isle of Arran* ferry.
CLINKERFORD – 4mm/P4: 18ft 6in x 3ft 6in, John Darch's layout based on Cinderford on the Forest of Dean, GWR steam.
CHERITON BISHOP – 4mm/OO: 20ft x 2ft by P. J. Wakeman. Fictitious GWR branch to the actual village of Cheriton Bishop, early BR period steam.
COEDWAY – 4mm/EM: 18ft x 2ft by Philip George. GWR branch in Welsh Marches, circa 1930-1948 with LMS incursions.
PASSAGE-WEST – 10mm ng: 27ft 6in x 2ft 6in by Dennis and Christopher Lepper, Irish 3ft gauge.
ORFORD QUAY & WICKHAM MARKET – 4mm/009: 10ft x 6ft, Brian Bassington's fictitious Great Eastern narrow gauge line.
SHARRAINE – 4mm/OO: 18ft 6in x 2ft. Ronald Curling's Scotrail branch terminus, diesel with steam specials.
SOUTHCOMBE – 4mm/OO: 28ft x 3ft, Basingstoke & N. Hants MRS, Southern region third-rail electrics.
FELSHAM TOWN – 4mm/009: 12ft x 2ft, Greg Dodsworth's freelance East Anglian line.
LINDON ROAD – 4mm/OO: 12ft x 1ft 6in by J. S. Long, Southern Region branch in the final days of steam.
ACTON MAIN LINE – 2mm/N: 20ft x 3ft, Richard Dockerill's modern Western region layout.
GEDNEY DROVE – 4mm/OO: 21ft 2in x 5ft by Ray Lightfoot. Midland & Great Northern Joint line in the late 1950s.
GREMBERT – 3.5mm/HO: 49ft 3in x 6ft 7in, Burscheid Club's German loco and freight yard.
LENZ – 3.5mm/HOm: 14ft x 3ft 6in by M. Kendall. Swiss metre gauge, Rhaetian Railway.

After 25 years out of the hobby, John Darch of the Glevum Area Group of the Scalefour Society restarted in 4mm/P4 and got to work on a layout representing the GWR in Gloucestershire. The result of his efforts, called 'Clinkerford' – no prizes for guessing where that is derived from – is on show at this year's Model Railway Club show. This shot shows part of the station that cannot be seen by viewers, so you can imagine the quality of the public side.

Happy anniversary

I see that MRJ is celebrating ten years of publication. On behalf of the SSMRS, congratulations to you and all associated with the magazine on the anniversary.

Until reading the editorial, I had forgotten just how long MRJ had been going – it seems far less than ten years ago that you broke the mould of the British model railway press with Issue 0. In that time, others have come (and gone) and yet you and your team still continue to produce a quality product. You comment in your editorial that the hobby has changed enormously over the same period. Such changes always have a 'chicken and egg' element to them, but I am sure that you and others at Wild Swan can take quiet satisfaction in knowing that you have undoubtedly been a major catalyst in bringing about that change.

Thanks for the last ten years and the support you have given to S-scale in your pages. Here's to the next ten years (and more!).

Norman Pattenden
Secretary
S Scale MRS

Congratulations on 10 years of MRJ. I know I speak for all my fellow club members when I say that through all 10 years MRJ has unfailingly supplied information, inspiration and sheer delight. Many thanks, and long may it continue.

John Allison
President, Warley MRC

Our heartfelt thanks to the many readers and friends who wrote in similar vein. Your support and fellowship is much appreciated. (Editor)

Small pink patches

The 'small pink patch' on vacuum brake hoses, referred to by Gerry Beale, is the maker's label. As well as the maker's name, it carries moulded month and year characters which are supposed to be selectively sliced off to indicate when the hose is fitted to the vehicle, so that it can be changed when its time in service is up. I suspect this may not always have been observed when the hose was being changed by the light of a flare lamp, with the rain sheeting down, and the yardmaster jumping up and down to get the train away! The label was about 3in by 1½in in size. Air brake hoses carry similar, but smaller, patches, usually white. Both patches tend to get 'lost' as the rubber acquires a coating of brake or ballast dust, and remains thus unless/until called on for royal or other ceremonial duties.

While on the subject, the buffer beam end cocks and the coupling heads are painted red for the brake pipe (BP), and yellow for the main reservoir pipe (MRP). The former is almost invariably closest to the coupling; and the latter is not always fitted to freight vehicles, especially those under private ownership. The ABP and MRP are often duplicated in pairs on modern coaching stock, located towards the ends of the buffer beams.

Ten years of MRJ – and it don't seem a day too much – keep up the good work!

Paul King
Hassocks
West Sussex

Duchesse pins

In response to your request for a supplier of duchesse pins, I can recommend the following:

George White Lacemaking Supplies,
40 Heath Drive,
Boston Spa,
West Yorkshire,
LS23 6PB.
(tel: 01937 842974)

Being an avid lacemaker with a railway modeller husband, I will now have to watch that my boxes of pins don't go walkies to his workshop!

Diana Blackburn
Lossiemouth
Morayshire

Thanks to my wife who is a needlewoman, I have tracked down a source of duchesse pins. It is Mr. Tim Parker and his telephone number is 01202 429 455. He sells by mail order. That's the good news. The bad news is that the cost of the pins has increased – they are now £7 plus 80p postage.

Congratulations on the tenth anniversary – here's to the second decade!

Roger Bickle
Wickford
Essex

We are grateful to reader John Arnold for Tim Parker's address – 124 Corhampton Road, Boscombe East, Bournemouth, BH6 5NZ – and to Vincent Worthington for another supplier: D. J. Hornsby, 25 Manwood Avenue, Canterbury, Kent, CT2 7AH (01227 454605) whose list shows an amazing array of brass pins in various lengths, thicknesses and head sizes.

Shades of green

Without wishing to detract from the artistic skills of Alan Brackenborough, which fully deserve recognition, may I make a couple of quick points? Whatever the lighting conditions, there is a notable difference between the shades of green on a 'Castle', a 'West Country' and an 'A4', all in BR livery; *Duke of Gloucester* is so much darker as to be nearly black!

I was pleased that Alan drew attention to the green dividers between orange and black lines, except that where simple horizontal lining was applied to early '50s streamlined MN/WC/BB locos, the black was sandwiched directly by the orange stripes. Given that various changes occurred later in their lives, Alan's advice to refer to a good photograph is a prerequisite to good modelling.

Personally, I will never be quite persuaded that a brush cannot equal a sprayed finish, nor do I find a satin gloss representative of an ex-works shine, but my work only needs to please me. At least we can all be spurred on to greater achievements with the help of articles in MRJ; long may they continue!

G. W. Richards
Preston
Lancashire

Something fishy about Bloaters

Andrew Lambert is wholly wrong when he notes that all the 18ft wheelbase Bloaters were withdrawn in 1943 (MRJ No. 76) though he can be forgiven since Parkside got it wrong in making this statement in the first place. What actually seems to have happened was that, on paper at least, the name 'Bloater' was officially changed to 'Fish' in 1943. Despite this, many of the vehicles were then written as 'Fish Bloater' instead. Most continued in service until the mid to late 1950s. However, some were transferred to parcels work during the war and a few survived until the early 1960s, so Andrew can quite accurately use the model on his layout. One last point is that the corner grab handles depicted on the Parkside bodyside do not – according to photographic evidence – appear to have been fitted. For a wealth of information he can do no better than to consult John Lewis's article in Wild Swan's *Great Western Railway Journal* No. 7.

David W. Gardner
Chippenham
Wilts

RSUs can do it

I have been following the articles about resistance soldering units with some interest as I have been using an Exactoscale RSU for about two years. It seems to me that some people have not genuinely attempted to use the RSU to its full potential – you can do a lot more than just slapping solder paste on two bits of metal. All my chassis and etched kits are made up using the RSU about 95% of the time. Why not try using short (and I mean short – 2mm or less) lengths of cored solder? By this method, one can form a fillet of solder just as strong as any made with an iron.

The letter from Dr. Brian Fayle in MRJ No. 76, stating that he has received a 'nasty electrical burn' when he inadvertently touched the baseplate, suggests a serious fault with the unit; he should get a qualified electrician damn fast, as I am sure that it is not right. I am always clipping the 'earth' wire to a pair of tweezers which I hold in order to solder small bits, or resting my wrist on the baseplate to support a shaky hand, and the only time that anything has happened was when I applied too much power and the tweezers got hot.

Venn Sturton
Orpington
Kent

John Ahern

I searched thoroughly through the list of all known articles and other correspondence by John Ahern (MRJ No. 75) but was unable to find the booklet which inspired me to choose OO gauge – *The Handbook of Two-Rail for OO gauge*, published by Hamblings of 10 Cecil Court, Charing Cross Road, London WC2 probably in 1952 or earlier. John Ahern's perception of the details of the world around us was fantastic, and his ingenuity for translating them into model form was clever in its simplicity. I'm grateful to him.

John E. Smith
Dorchester
Dorset

Mel Thornburgh

David Kitchiner's exceptional article on the late John Ahern's Madder Valley Railway and the correspondence that it rightly stimulated – not least the letter from Bob Brown in California – leads me to write enquiring about another very talented modeller of the period prior to 1939, mentioned by Bob – namely Mel Thornburgh.

In that period he built quite a number of 7mm scale models for various people in this country and some may still survive. Would any of our readers know anything of their existence or, better still, present whereabouts?

David H. Odabashian
Malvern
Worcestershire

When West wasn't best . . .

Further to P. J. Devlin's letter in MRJ No. 75 regarding the popularity of the 1930s period for GWR layouts and the early BR era for those based on other regions, there are probably many good reasons for this. Nothing very exciting was happening on the Western Region in the late '40s and early '50s. The 'Kings' were the one BR top-link passenger type which looked distinctly uneasy in the early BR standard light blue livery, and the appearance of none of the mixed traffic types was improved when the LNWR-style lined black livery replaced the unlined GWR green. Although the crimson and cream corridor coach livery looked attractive when new, it didn't wear as well as the traditional chocolate and cream. Whilst it is true that choosing this period allows one to run 'Modified Halls', 'Counties' and taper-boilered pannier tanks, and that Hawksworth coaches, externally at least, were distinctly more elegant in appearance than Collett's, none of these advantages are worth foregoing for the interesting 19th century designs that lingered in GWR service until the 'twenties and 'thirties, but had disappeared completely by 1950.

In contrast, some of the most interesting and exciting LNER and Southern designs were only built in quantity after nationalisation, particularly the LNER Peppercorn Pacifics, B1s, K1s and L1s (the last being quite good-looking machines even if they did tear themselves to pieces when working hard), and the 'West Country' and 'Battle of Britain' classes on the Southern. On both these railways, too, many elderly interesting designs survived until well into the 'fifties, often sporting attractive liveries applied in reaction to wartime austerity in the last years before nationalisation. One thinks of apple green G12/4s, K2s, J72s and J83s, and malachite green Ls, M7s, Atlantics and Pacific tanks. In 1950 one could see Gresley unstreamlined Pacifics in apple green, purple-blue lined in red and black, and light blue lined in black and white, standing side by side at centres such as York or Newcastle, and there can scarcely be a more elegant and dignified sight on our post-1914 railway system than a light blue Peppercorn A1 at the head of an all-Pullman 'Queen of Scots'.

The LMS was in yet a different category. At first sight its last days were dull, dingy and austere. Its official livery was black lined in straw and maroon for top-link passenger locos, and unlined black for everything else. Its carriages were dull maroon. As on the GWR very little had appeared in the way of motive power (if one discounts the appearance of No. 10000, the first main line diesel, during the last few days of the company's existence) that was not available in similar form in the halcyon pre-war days. However, the introduction of British Railways liveries provided an exciting new image for ex-LMS lines. How much more attractive did a fully-lined Black 5 look hauling a train of crimson and cream coaches than its late LMS equivalent in unlined black and maroon. Because of the LMS policy of 'touching up' where possible rather than fully repainting a locomotive after overhaul, the red livery survived until well after nationalisation on many passenger locomotives, and the odd maroon Compound, Jubilee and unrebuilt Patriot could still be seen as late as 1950. Not only was there thus an interesting choice of livery variation on LMS lines in the late '40s and early '50s, but despite Fowler's and Stanier's much-vaunted standardisation programmes, much secondary traffic continued to have a distinctly pre-grouping appearance until the dieselisation of the modernisation plan, at least on former Midland, Lancashire & Yorkshire, and Caledonian lines. Thus the early British Railways era is an attractive option for anyone modelling areas served by the LMS, even if they are too young to remember this period. It is, after all, worth bearing in mind that very few people under 40 years of age will be able to remember much about the pre-1960s railway scene in any detail, so it must be more than nostalgia that causes younger modellers to choose this period.

David Burton
Wandsworth
London SW18

Cyril Goldings's photograph of a little Lewin in service.

Weighting for Colombo

It is always a pleasure to find the latest issue of MRJ on the shelves of W. H. Smith's here in Brussels. I would like to make some comments concerning John Cockcroft's article on the L & Y 0–8–0 heavy hauler in MRJ No. 74. I have noted that most inside-cylinder locomotives with Stephenson's valve gear motion had the balance weights of the driving axle wheels (the first or second axle is often the one connected to the cylinders) on the same side as the coupling rod head. The other driving wheels have their balance weights opposite the coupling rod head, like outside cylinder locos, or sometimes no balance weights at all. Examples of this are the Armstrong standard goods engine, GWR Duke Class, the LMS version of the LNWR G2 0–8–0, the Caledonian Dunalastair 4–4–0 and many others! Most interesting is the case of Dean's four-cylinder 2–4–0 broad gauge tandem compound loco, where the position of the balance weights on the leading driving wheels if offset 135°. So, what happens with LMS 12839 (ex-LYR 31) as built by Mr. Cockcroft, and with 4–4–0 *Colombo* featured in MRJ No. 53? I, and I am sure many others, would welcome the technical reasons for positioning weights in steam locomotive wheels, in order to help readers to build still better models.

Philippe Charlier
Brussels
Belgium

Seaham's little urchin.

In view of the article in MRJ No. 73 on the little Lewin engine, I enclose a photograph I took at Seaham in late October 1966 (when the temperature felt as if it was just a few degrees above absolute zero!). It clearly shows how small No. 18 was relative to an open wagon. Its job was to go under the coal staithes with an odd chaldron wagon on spillage collection.

Cyril Golding
Poulton-le-Fylde
Lancashire

Shunting in cyberspace

New technology often finds it way into our hobby, but having recently observed developments in Germany, the application of computer technology to model railways on the Continent is clearly far in advance of anything produced by UK manufacturers. Gone are the multitude of switches, wires, banks of relays, and baffling control panels which take up valuable modelling time to install and maintain. In their place we have the prospect of a computer screen displaying the track diagram, interaction with screen and 'mouse' to control the locomotives, signals and turnouts, preset a properly interlocked route, and run a sequence of trains, either manually or automatically under computer control. All the devices are connected to a common multi-wire highway and addressed by digital signals from the computer, or alternatively – say for shunting – from a hand-held controller. Each loco is fitted with a module and is individually controlled. No longer would we control a number of block sections of track on which a loco is running, but the loco itself.

Many modellers in the UK may see some of the facilities, such as turning on locomotive lights or sounding horns, as gimmicks. And here, many modellers like to make up their own trackwork, create their own block sections and do their own wiring. But this is not a trivial task, and perhaps offputting for the newcomer. What is required for maximum simplicity is the best of both worlds – locos carrying their own power and a digital highway for the signalling, combined by computer control. That is my hope for the future – layouts with much less individual wiring and more 'black boxes'. I would be interested to know if I am alone. Is there a manufacturer or group of individuals who would be prepared to market such a system? It would not, after all, be limited by gauge or regional interest to a small range of modellers.

George Lupton
Taunton
Somerset

In the steps of the lord . . .

The reference in MRJ No. 72 to the Earl of Clew and his return to modelling techniques of 45 years ago, prompted me to write regarding my own similar experience. Having been a railway modeller continuously for the best part of 40 years, my modelling had lost direction and become stale; I had, I feel, fallen into the 'kit trap', my scratchbuilding was on the wane

and even a move into 7mm finescale did little to help matters.

Over the years I had acquired skills and improved in leaps and bounds, but in so doing had removed part of the reason for me being a modeller. I have therefore compiled for myself a set of rules to go 'back to basics', review obsolete methods dropped by progress, adapt new technology where appropriate and in some respects return to the postwar days of the hobby. Perhaps the truly magnificent buildings of Gordon Gravett are an example of this philosophy; he has taken a well defined technique of the past 30 plus years, added some new components and his skills to elevate modelling to new heights. Long may there be kits and modellers to enjoy constructing them, but I have taken a step back and have regained high levels of enjoyment.

Paul Eason
Stoke Gifford
Bristol

All blown out

To all who have followed the saga of the 'Ten Pound Compressor', I regret to report that it will not now be possible to obtain supplies of the tyre pump used in the article. I have spoken to the importers, who state that the compressor was made in the Far East to the specification of Halfords. We now know that Halfords have discontinued the item. The importer would be prepared to import more, but only in full container-loads – about 1,000 pieces!

An alternative that has occurred to me is to buy a similar pumping unit and fit a pressure regulator (the heart of the system) to it. I believe that Badger, the airbrush people, do supply such an item and I am investigating. Meanwhile I look forward to hearing of any successful alternatives from readers.

Those who wrote to me c/o MRJ should by now have received personal replies. Once again, many thanks for the interest shown.

Ian Barefoot
Crawley
Sussex

DIARY

APRIL

2 **Talyllyn Railway Preservation Society** (Wessex Area Group) exhibition at Ferneham Hall, Fareham, Hants. 10.15–5.00. £2.00/£1.00/£5.00.

14-16 **Furness Model Railway Club** exhibition at Forum 28, Duke Street, Barrow-in-Furness, Cumbria. 12.00 – 6.00 (Fri), 10.00 – 6.00 (Sat), 10.00 – 5.00 (Sun). £2.00/£1.00.

15 **Bushey & District Model Railway Society** open day at Falconer School, Falconer Road, Bushey, Herts. 11.00 – 5.00. £1.00/50p.

15-17 **Gresley Model Group** exhibition at Gresley Social Centre and Gresley Scout Centre, Park Road, Church Gresley, Swadlincote, Derbyshire. 10.00 – 6.00. £2.00/£1.00/£5.00.

15-18 **York Model Railway Club** 33rd annual show at the County Stand, York Racecourse, York. 10.00 – 6.00 (Sat), noon – 5.00 (Sun), 10.00 – 6.00 (Mon), 10.00 – 5.00 (Tues). £4/£2/£10.

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LAYOUTS
'Ruyton Road': EM, John Spencer (see MRJ No. 75)
'Grafton': P4, Steve Lee.
'Faringdon': P4, Stephen Williams (see MRJ No. 77)
'Lakey Hill': EM, Ray & Cida Earl.
'Burwell Fen': 2mm, Mark Fielder.
'Lydham Heath': S, Barry Norman.
ZOB (HO), Mini-ZOB (Z) & Gauge 1: Brian Harrap.

Demonstrations from Tony Hill, Gordon & Maggie Gravett, The Dunwich Team (Roy Jackson, Geoff Kent & John Phillips) and Carl Legg.

21-23 **Macclesfield Model Railway Group** 24th annual exhibition at Ryles Park School, Ryles Park Road, Macclesfield, Cheshire. 5.00 – 10.00 (Fri), 10.00 – 6.00 (Sat), 10.00 – 5.00 (Sun). £2.00/£1.00/£5.00.

22 **Peterborough & District Model Railway Club** exhibition at Austin Hall, Main Street, Yaxley, Near Peterborough, Cambs. 10.00 – 5.00. £1.25/75p/£2.50.

22/23 **Dunfermline Model Railway Club** exhibition at Glen Pavilion, Pittencreiff Park, Dunfermline, Fife, Scotland. 10.00 – 6.00 (5.00 Sun). £1.50/60p/£3.50.

22/23 **Danum Formil Society** exhibition at The Dome, Doncaster, South Yorkshire. 10.00 – 6.00 (5.00 Sun). £2.00/£1.00/£5.00.

22/23 **St. John's (Mickleover) Model Railway Group** exhibition at The Assembly Rooms, Market Place, Derby. 10.30 – 7.00 (5.00 Sun). £3.00/£2.00/£8.00.

29 **Association of Shrewsbury Railway Modellers/Shropshire & Mid Wales Gauge 'O' Group** annual open day at the Morris Hall, Belstone, Shrewsbury, Shropshire. 10.00 – 4.00. Free.

29 **East Grinstead Model Railway Club** exhibition at The Parish Halls, De le Warr Road, East Grinstead, West Sussex. 10.00 – 5.00. £1.50/75p/£4.00.

MAY

6/8 **Wolverhampton Model Railway Club** exhibition at Pendeford High School, Marsh Lane, Wolverhampton, West Midlands. noon – 7.00 (Sat), 10.30 – 6.00 (Sun), 10.30 – 5.00 (Mon). £2.20/£1.10/£5.50.

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CROSSWORD SOLUTION – Congratulations to everyone who entered solutions to our Christmas Crossword, but well done indeed to the first three out of the hat: Paul Jamieson of Lichfield, Staffs, Steve Rogers of Milton Keynes, and David Franks of Blantyre, Glasgow. They win a free year's subscription to MRJ or the equivalent in Wild Swan books.

The following also submitted correct entries (and we are including the many who put 'toe' instead of 'tie' for 14 Down): David Porter, Glasgow; Robin Webb, Buntingford; Richard Dagger, Chippenham; David Chamberlin, Cheadle; Christopher Rabson, Wantage; M. J. Pickering, Hamilton; Stephen Williams, Stafford; P. Hall, Widnes; B. Walsh, Burton-on-Trent; B. Pickering, Morecambe; Paul Gittins, Wakefield; Philip Millard, Woking; D. L. Coombs, Lincoln; Steve Hall, Leeds; Brian Self, Woking; Martin Whitaker, Wakefield; David Mallott, Essen (Germany); Dave Purvis, Eastleigh; T. A. Walker, Ross-and-Cromarty; Dr. E. O. Ashworth, Bramcote; J. D. Smith, Weybridge; Alan Dare, Matlock; Michael Larcombe, Chippenham; N. J. Knowles, West Wickham; John Chambers; Thornton Heath; John Darwell, Hebburn; Paul Bennett, Brentwood; J. Leatherland, Poulton-le-Fylde; S. M. Paterson, Halstead; Peter Umpleby, Leeds; Richard Thornton, Prestatyn; Ian Smith, Salisbury; M. N. Lawton, Stockport; Mike Walshaw, Renfrewshire; P. L. Allwood, Derby; John Howell, Dumfries; Roy Jackson, Gainsborough; C. Copplestone, Hull; Martin Tester, Cambridge; Geoff Kent, Grimsby; Stephen Harris, Leighton Buzzard; Mark Phillips, Brigg; Jim Snowdon, West Drayton; Tim Hall, Bristol; John Phillips, Doncaster; David Churchill, Solihull; Roger Lycett-Smith, Worcester, Martin Hearne, Leatherhead; Chris Pleasted, Guildford; J. Friend, Glossop; Steve Haygreen, Hitchin; Chris Thomas, Stoke-on-Trent; K. T. Hoskins, Weybridge; Pat and Elaine McCarthy, Milton Keynes; R. I. Reid, Lee on Solent; Andrew Wright, Bolton; B. Liptrot, Bolton; Robert Palmström, Oslo; Nick Stanbury, Brighton; P. Buckingham, Cockermouth; Roger Enzor, York; Tony Champkins, Horsham; P. J. Elvin, Northwood; K. J. Bowen, Lee Green.

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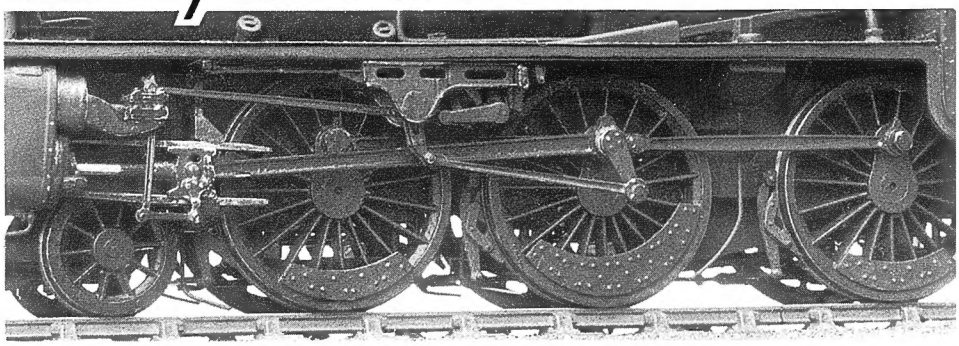

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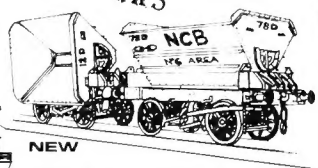

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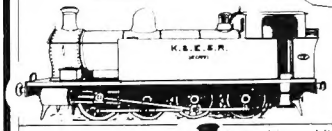

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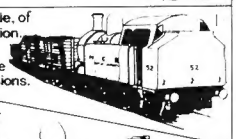

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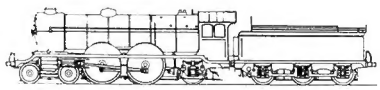

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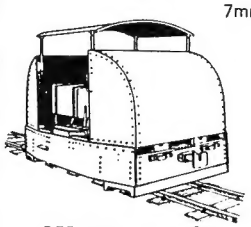

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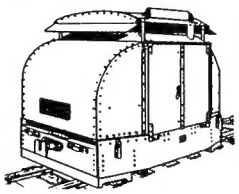

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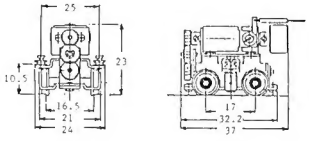

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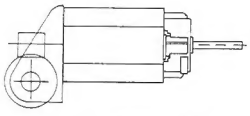

38:1 GEARBOXES
SLIM, MEDIUM OR WIDELINE
(6.5mm) (9.5mm) (12.0mm)
ALL WITH ULTRASCALE GEARS

Normally for 1/8in axles
(2mm to order, except slimline)

Normally for 1.5mm motor shafts
(2mm or 3/32in to order)

Medium & Wideline with axle grub-screw
(slimline requires Loctite)
(Loctite option on medium & wide)

PRICE: £5.75 each
(inc. all UK taxes paid)

OTHER NEWS: 8/16 Coreless motor (8 volt only) **£22.95, SE&CR 'P'** chassis kit now in **nickel silver, NEW 0/16.5** Ford 'T' Pick-up Truck kit **£49.95, NEW 0/16.5** 0–4–0 loco chassis kit (for Springside 'Rivers', etc.) with inside and outside frame options, **I.O.M. 'Caledonia'** in preparation, brass **'HO' American** loco kit in preparation.

EXHIBITIONS: EXPO-EM, BLETCHLEY 13/14th MAY (assisted by John Brighton of 'Steamline', Sheffield, who will be happy to discuss loco building with you).

★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★ ★

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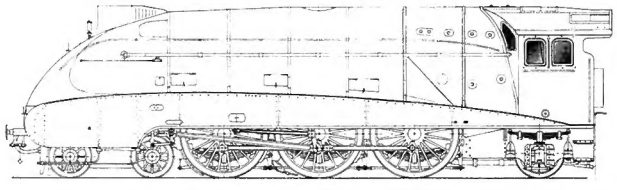
P.O. BOX 31, EXETER, EX4 6NY (Tel/Fax: 0–(44)–1392–43–77–55)

NEW! L.N.E.R. A4 4–6–2



After the success of my highly acclaimed kits for the Gresley A1 and A3 Pacifics, I am now able to take orders for this new kit for his classic A4 4–6–2. The kits will be produced in small batches and if you wish to secure a kit from the first batch, which will be available in May, I suggest you order now to avoid disappointment.

Features of the kit are:

- ★ Finely detailed, one-piece casting for the streamlined casing in resin.
- ★ Compensated chassis (which can be built rigid).
- ★ Choice of etched side skirts for locomotives in original condition or for the later condition with the skirts largely removed.
- ★ Choice of single chimney or double chimney.
- ★ Highly detailed etchings for the motion, in nickel silver, with all prototype fork joints modelled and working conjugated valve gear which can be reversed.
- ★ Fully working Wakefield lubricator drive.
- ★ Full detailed cab interior (including working sliding windows and cab doors) using fine etchings, lost wax castings in both nickel silver and brass and whitemetal castings.
- ★ Removable cab roof, which is built on an etched jig to ease construction.

7mm – £295.00 excluding wheels, motor and tender.
7mm scale locomotive hornblocks based on the A4 pattern. Pack of six – £8.00.

To run with the A4 I have produced a kit for the 1928 Corridor Tender which were originally fitted to A1 & A3 Pacifics. In 1936 they were modified and fitted to new A4 Pacifics. The kit contains alternative parts to build both of these versions and is therefore suitable for my A1 and A3 kits which are still available and for the new A4 kit. **4mm** – £36.50. **7mm** – £95.00 excluding wheels.

A kit for the A4 4–6–2 in 4mm scale will be available later this year.

All prices are inclusive of VAT. Overseas deduct VAT, postage at cost.
Postage & packing (UK) 4mm – kits £1.50 – small items £0.50
7mm – kits £3.50 – small items £1.00

Send SAE for new price lists – please state scale

I shall be at – Staines Finescale 29th April – ExpoEM Bletchley 13th/14th May.
Next release – LSWR M7 0–4–4T

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Exhibition diary

Scalefour North, Wakefield, 1/2 April. Staines Finescale Show 29 April. ExpoEM 13/14 May. Chatham 10/11 June.

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Tuesday 10.30am-8.00pm

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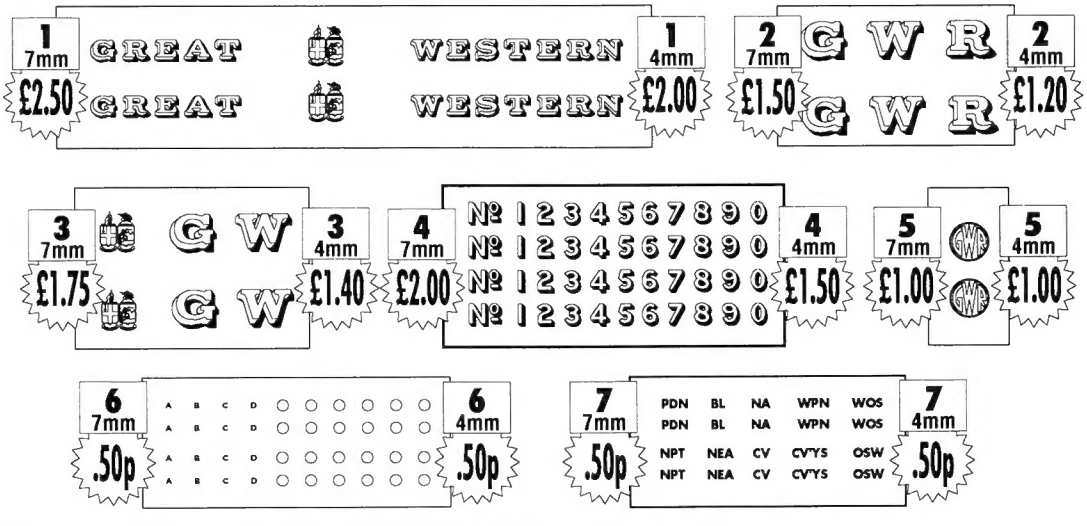
1 7mm £2.50
GREAT WESTERN
GREAT WESTERN
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2 7mm £1.50
G W R
G W R
2 4mm £1.20
3 7mm £1.75
G W
G W
3 4mm £1.40
4 7mm £2.00
№ 1 2 3 4 5 6 7 8 9 0
№ 1 2 3 4 5 6 7 8 9 0
№ 1 2 3 4 5 6 7 8 9 0
№ 1 2 3 4 5 6 7 8 9 0
4 4mm £1.50
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5 4mm £1.00
6 7mm .50p
6 4mm .50p
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NPT NEA CV CVYS OSW
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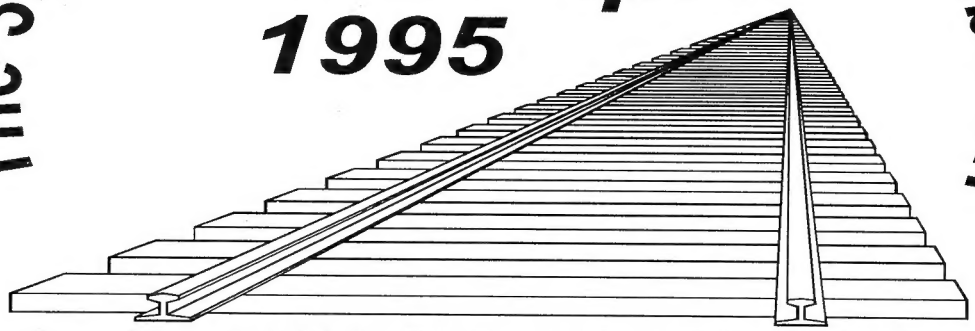
The 3rd Staines Finescale Exhibition

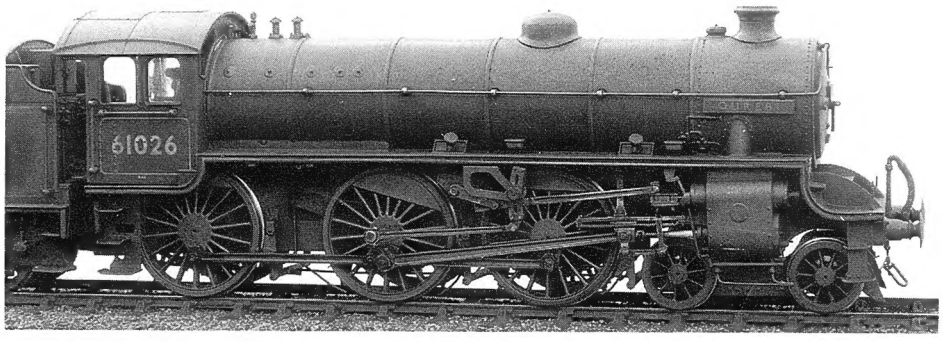
Saturday 29th April 1995



In aid of SAVE THE CHILDREN FUND
Staines Methodist Church, Thames Street
Staines, Middlesex, 10.30am to 5.30pm

Sponsored by **STEAM AGE** *of Worthing*

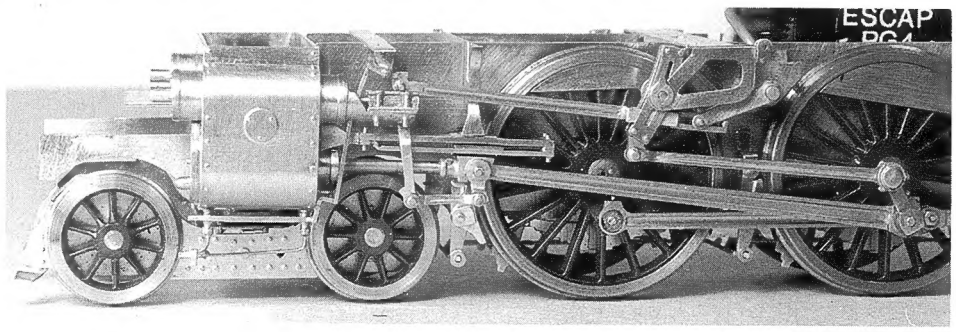
Chassis kit for **LNER B1**



This kit was designed to produce an accurate and realistic 4mm scale LNER B1 model using the excellent Replica body as a basis, although any scale body could be used.

The particularly fine valve gear is a correct representation of the original with forked joints and full 'box' expansion links. As with all my kits, full springing is provided, although the model may be built rigid or compensated if preferred.

The chassis is etched in nickel silver and castings are exclusively brass. Included are a tender chassis, chimney, dome, alternative smokebox doors plus full instructions, but not wheels, gears or motor.



Price £48.00
plus £1.50 P & P.

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